

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Vasu Jagannathan Examiner #: 68129 Date: 11/18/03
Art Unit: 1714 Phone Number 301-6-2777 Serial Number: _____
Mail Box and Bldg/Room Location: CP 3 4001 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Best Available Copy

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Searcher: EA
Searcher Phone #: _____
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Date Searcher Picked Up: _____
Date Completed: 11-19-03
Searcher Prep & Review Time: 15
Clerical Prep Time: _____
Online Time: 110

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) 5

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family _____

Other _____

Vendors and cost where applicable

STN: \$ 400.00

Dialog _____

Subject
Questel/Orbit _____

Dr. Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

Other (specify) _____

Mellerson, Kendra

From: Linnell, Eric
Sent: Tuesday, November 18, 2003 11:19 AM
To: Mellerson, Kendra
Subject: FW: search for SAWS case

(please print out this and the attachment, and enter into Access database, log sheets, etc.--thanks)

-----Original Message-----

Fr m: Jagannathan, Vasu
Sent: Tuesday, November 18, 2003 8:42 AM
T : Linnell, Eric
Cc: Hickey, Elaine
Subject: search for SAWS case

Would you be kind enough to search for the invention as described in claims 324, 327, 336, 348, 371, 380, 381, 383 and 384 shown in the attached image file? Note that the image consists of 3 pages. Please give me a search report broken down claim-by-claim.

I believe the software on your machine would enable you to open the image file and to zoom on the claims. If you prefer a paper copy of the claims or have any other questions, please let me know. Thank you.

Vasu Jagannathan
SPE, 1714
CP-3, 4D01

↑ yes, please, this would help us much.



SAWS759srch.tif

original copy

324. (Amended) A stabilizing composition for a vinyl halide resin comprising:

- (a) a metal containing stabilizer of formula I



in which,

R represents an alkyl group, and

SR^{*}, SR^{*} represents a mercaptide ligand

n = 1 or 2

x = greater than 0 to 3, and

x + 2y = 4 - n; and

- (b) a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate which is present in an amount by weight from about 2 to about 25 times the amount by weight of the Sn component of in said metal containing stabilizer metal containing stabilizer and said mercapto alkanol ester are present in an amount effective to stabilize a vinyl halide resin against heat and/or light,

wherein said mercapto alkanol ester replaces from about 20% to about 90% by weight of the metal containing stabilizer and wherein said composition has a heat or light stability at least comparable to a composition where said mercapto alkanol ester does not replace about 20% to about 90% by weight of the metal containing stabilizer.

327. (Previously Presented) The composition of claim 324, wherein the mercapto alkanol ester of a carboxylic acid has the formula:

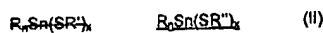


where R is a linear or branched alkyl or alkenyl, aryl or aralkyl; and

R' represents a C₂ to C₁₈ alkylene.

336. (Amended) A stabilizing composition for a vinyl halide resin comprising:

- (a) a metal containing stabilizer of formula II



in which,

R represents an alkyl group

SR^{*}, SR^{*} represents a mercaptide ligand

n = 1 or 2, and

x = 4 - n, where x is an integer; and

- (b) a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate which is present in an amount from 2 to 25 times the amount of the Sn component of in said metal containing stabilizer,

wherein said metal containing stabilizer and said mercapto alkanol ester are present in an amount effective to stabilize a vinyl halide resin against heat and/or light

wherein said mercapto alkanol ester replaces from about 20% to about 90% by weight of the metal containing stabilizer and wherein said composition has a heat or light stability at least comparable to a composition where said mercapto alkanol ester does not replace about 20% to about 90% by weight of the metal containing stabilizer.

348. (Amended) The A composition comprising:

(a) a monoalkyltin-ids(mercapto alkanol ester of a carboxylic acid) or dialkyltin bis(mercapto alkanol ester of a carboxylic acid) compound wherein the alkyl is a C₁ to C₈ alkyl; and

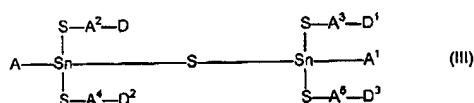
(b) a mercapto alkanol ester of a carboxylic acid ~~providing a source of mercaptan exceeding that required to saturate which is present in an amount from 2 to 25 times the amount of the Sn tin component of in said metal-containing stabilizer.~~
monoalkyltin- or dialkyltin bis(mercapto alkanol ester of a carboxylic acid).

wherein said (a) and (b) components are present in an amount effective to stabilize a vinyl halide resin against heat and/or

wherein said mercapto alkanol ester replaces from about 20% to about 90% by weight of the metal containing stabilizer and wherein said composition has a heat or light stability at least comparable to a composition where said mercapto alkanol ester does not replace about 20% to about 90% by weight of the metal containing stabilizer.

371. (New) A stabilizing composition for a vinyl halide resin comprising:

(a) a metal containing stabilizer of formula III



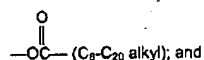
In which,

A and A¹ represent at least one alkyl of 1 to 12 carbon atoms, where A

and A¹ can be the same or different;

A², A³, A⁴, and A⁶ represent at least one lower alkylene;

D, D¹, D², and D³ represent at least one of OH; — (C₈-C₁₈ alkyl); or

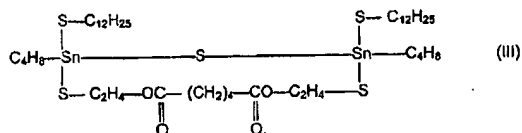


(b) a mercapto alkanol ester of a carboxylic acid which is present in an

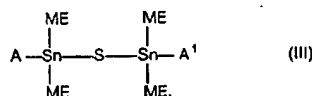
amount by weight from about 2 to about 25 times the amount by weight of the Sn in said metal containing stabilizer,

wherein said mercapto alkanol ester replaces from about 20% to about 90% by weight of the metal containing stabilizer and wherein said composition has a heat or light stability at least comparable to a composition where said mercapto alkanol ester does not replace about 20% to about 90% by weight of the metal containing stabilizer.

380. (New) The composition of claim 371, wherein said a metal containing stabilizer of formula III is:



381. (New) The composition of claim 371, wherein said metal containing stabilizer of formula III is:

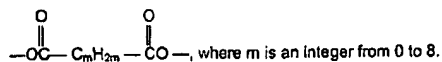


where

A and A¹ represent methyl, butyl or octyl and can be the same or different, and

ME represents a mercaptoethyl stearate, a mercaptoethyl oleate, or a mercaptoethyl linoleate and can be the same or different.

383. (New) The composition of claim 371, wherein the combination of D and D¹ or the combination of D² and D³ form the group



384. (New) A stabilizing composition for a vinyl halide resin comprising:

- (a) at least two metal containing stabilizers chosen from formulas I, II, and III,

wherein

formula I is:

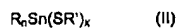


in which,

R represents an alkyl group, and

SR' represents a mercaptide ligand,

formula II is:



in which,

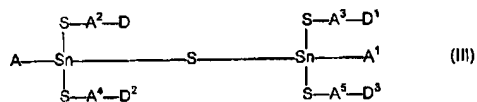
R represents an alkyl group

SR' represents a mercaptide ligand,

n = 1 or 2, and

x = 4-n, wherein x is an integer, and

formula III is:



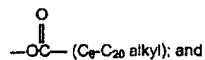
in which,

A and A¹ represent at least one alkyl of 1 to 12 carbon atoms, where A

and A¹ can be the same or different;

A², A³, A⁴, and A⁵ represent at least one lower alkylene;

D, D¹, D², and D³ represent at least one of OH; —(C₆—C₁₈ alkyl); or



- (b) a mercapto alkanol ester of a carboxylic acid which is present in an amount by weight from about 2 to about 25 times the amount by weight of the Sn in said metal containing stabilizers.

=> file reg

FILE 'REGISTRY' ENTERED AT 11:51:01 ON 19 NOV 2003
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=> d his

FILE 'LREGISTRY' ENTERED AT 09:37:32 ON 19 NOV 2003

L1 STR
L2 STR

FILE 'REGISTRY' ENTERED AT 10:14:29 ON 19 NOV 2003

L3 50 S L1
L4 2575 S L1 FUL
SAV L4 JAG000/A
L5 3 S L2
L6 SCR 1771
L7 33 S L2 AND L6
L8 565 S L2 AND L6 FUL
SAV L8 JAG000A/A

FILE 'ZCAPLUS' ENTERED AT 10:28:50 ON 19 NOV 2003

L9 2064 S L4
L10 535 S L8
L11 37 S L9 AND L10

FILE 'LREGISTRY' ENTERED AT 10:30:22 ON 19 NOV 2003

L12 STR L1

FILE 'REGISTRY' ENTERED AT 10:34:06 ON 19 NOV 2003

L13 1 S L12 SSS SAM SUB=L4
L14 31 S L12 SSS FUL SUB=L4
SAV L14 JAG000B/A

FILE 'ZCAPLUS' ENTERED AT 10:35:55 ON 19 NOV 2003

L15 21 S L14
L16 7 S L15 AND L10

FILE 'LREGISTRY' ENTERED AT 10:39:30 ON 19 NOV 2003

L17 STR L1

FILE 'REGISTRY' ENTERED AT 10:48:05 ON 19 NOV 2003

L18 50 S L17 SSS SAM SUB=L4
L19 1073 S L17 SSS FUL SUB=L4
SAV L19 JAG000C/A

FILE 'ZCAPLUS' ENTERED AT 10:51:11 ON 19 NOV 2003

L20 1417 S L19
L21 32 S L20 AND L10

L22 FILE 'LREGISTRY' ENTERED AT 10:53:05 ON 19 NOV 2003
STR

L23 FILE 'REGISTRY' ENTERED AT 11:02:43 ON 19 NOV 2003
10 S L22 SSS SAM SUB=L4
L24 258 S L22 SSS FUL SUB=L4
SAV L24 JAG000D/A

L25 FILE 'ZCAPLUS' ENTERED AT 11:04:42 ON 19 NOV 2003
80 S L24
L26 30 S L25 AND L10

L27 FILE 'LREGISTRY' ENTERED AT 11:11:02 ON 19 NOV 2003
STR L1

L28 FILE 'REGISTRY' ENTERED AT 11:15:08 ON 19 NOV 2003
9 S L27
L29 282 S L27 FUL
SAV L29 JAG000E/A

L30 FILE 'ZCAPLUS' ENTERED AT 11:20:35 ON 19 NOV 2003
442 S L29
L31 15 S L30 AND L10

L32 FILE 'LREGISTRY' ENTERED AT 11:21:56 ON 19 NOV 2003
STR

L33 FILE 'REGISTRY' ENTERED AT 11:29:06 ON 19 NOV 2003
1 S L32 SSS SAM SUB=L29
L34 53 S L32 SSS FUL SUB=L29
SAV L34 JAG000F/A

L35 FILE 'ZCAPLUS' ENTERED AT 11:30:34 ON 19 NOV 2003
28 S L34
L36 8 S L35 AND L10

L37 FILE 'LREGISTRY' ENTERED AT 11:31:57 ON 19 NOV 2003
STR L27

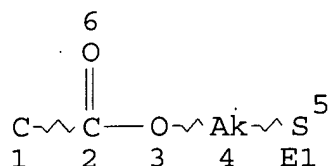
L38 FILE 'REGISTRY' ENTERED AT 11:38:27 ON 19 NOV 2003
0 S L37 SSS SAM SUB=L29
L39 STR L37
L40 0 S L39 SSS SAM SUB=L29
L41 13 S L39 SSS FUL SUB=L29
SAV L41 JAG000G/A

L42 FILE 'ZCAPLUS' ENTERED AT 11:44:11 ON 19 NOV 2003
5 S L41
L43 1 S L42 AND L10
L44 5 S L42 OR L43
L45 1423 S L15 OR L20

L46 45 S L15 OR L35
 L47 1423 S L20 OR L35
 L48 33 S (L45 OR L46 OR L47) AND L10

FILE 'REGISTRY' ENTERED AT 11:51:01 ON 19 NOV 2003

=> d l8 que stat
 L2 STR



NODE ATTRIBUTES:

HCOUNT IS E1 AT 5
 NSPEC IS RC AT 1
 CONNECT IS E2 RC AT 4
 CONNECT IS E1 RC AT 5
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 6

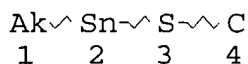
STEREO ATTRIBUTES: NONE

L6 SCR 1771
 L8 565 SEA FILE=REGISTRY SSS FUL L2 AND L6

100.0% PROCESSED 16833 ITERATIONS
 SEARCH TIME: 00.00.01

565 ANSWERS

=> d l14 que stat
 L1 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 4
 CONNECT IS E1 RC AT 1
 CONNECT IS E2 RC AT 3
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L4 2575 SEA FILE=REGISTRY SSS FUL L1

L12 STR

5

S

>

Ak~Sn~S~C

1 2 3 4

NODE ATTRIBUTES:

NSPEC IS RC AT 4

CONNECT IS E1 RC AT 1

CONNECT IS E3 RC AT 2

CONNECT IS E2 RC AT 3

CONNECT IS E1 RC AT 5

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L14 31 SEA FILE=REGISTRY SUB=L4 SSS FUL L12

100.0% PROCESSED 1744 ITERATIONS

31 ANSWERS

SEARCH TIME: 00.00.01

=> d l19 que stat

L1 STR

Ak~Sn~S~C

1 2 3 4

NODE ATTRIBUTES:

NSPEC IS RC AT 4

CONNECT IS E1 RC AT 1

CONNECT IS E2 RC AT 3

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

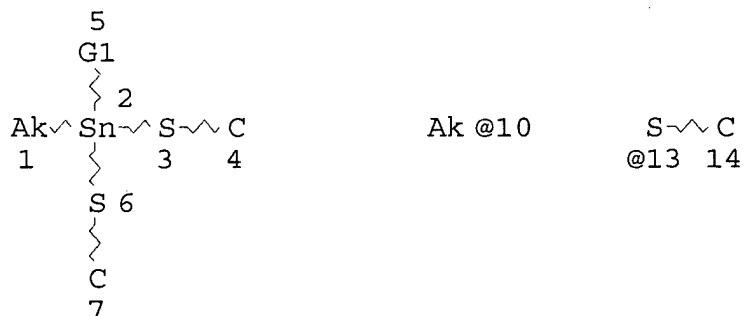
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L4 2575 SEA FILE=REGISTRY SSS FUL L1

L17 STR



VAR G1=10/13

NODE ATTRIBUTES:

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NSPEC  IS RC      AT    4
NSPEC  IS RC      AT    7
NSPEC  IS RC      AT   14
CONNECT IS E1  RC AT    1
CONNECT IS E2  RC AT    3
CONNECT IS E2  RC AT    6
CONNECT IS E1  RC AT   10
CONNECT IS E2  RC AT   13
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L19 1073 SEA FILE=REGISTRY SUB=L4 SSS FUL L17

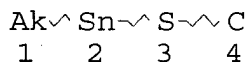
100.0% PROCESSED 1671 ITERATIONS

1073 ANSWERS

SEARCH TIME: 00.00.01

=> d l24 que stat

L1 STR



NODE ATTRIBUTES:

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NSPEC  IS RC      AT    4
CONNECT IS E1  RC AT    1
CONNECT IS E2  RC AT    3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:

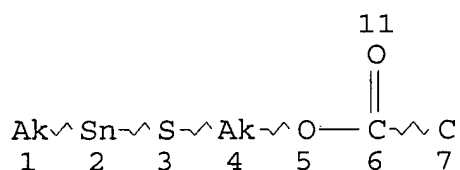
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L4 2575 SEA FILE=REGISTRY SSS FUL L1

L22 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 7

CONNECT IS E1 RC AT 1

CONNECT IS E2 RC AT 3

CONNECT IS E2 RC AT 4

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L24 258 SEA FILE=REGISTRY SUB=L4 SSS FUL L22

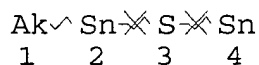
100.0% PROCESSED 1130 ITERATIONS

258 ANSWERS

SEARCH TIME: 00.00.01

=> d l34 que stat

L27 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 2

NSPEC IS RC AT 3

NSPEC IS RC AT 4

CONNECT IS E1 RC AT 1

CONNECT IS E2 RC AT 3

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

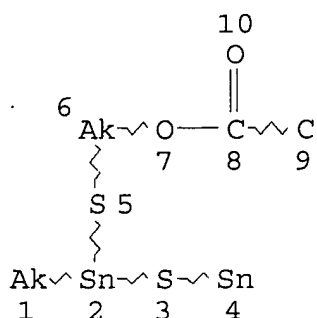
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L29 282 SEA FILE=REGISTRY SSS FUL L27
 L32 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 9
 CONNECT IS E1 RC AT 1
 CONNECT IS E2 RC AT 3
 CONNECT IS E2 RC AT 5
 CONNECT IS E2 RC AT 6
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L34 53 SEA FILE=REGISTRY SUB=L29 SSS FUL L32

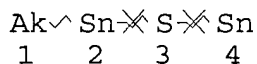
100.0% PROCESSED 105 ITERATIONS

53 ANSWERS

SEARCH TIME: 00.00.01

=> d l41 que stat

L27 STR



NODE ATTRIBUTES:

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 NSPEC IS RC AT 3
 NSPEC IS RC AT 4
 CONNECT IS E1 RC AT 1
 CONNECT IS E2 RC AT 3
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

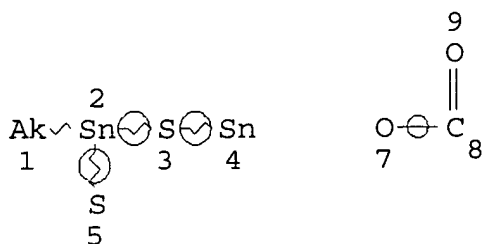
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

L29 282 SEA FILE=REGISTRY SSS FUL L27
L39 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 2
NSPEC IS RC AT 3
NSPEC IS RC AT 4
NSPEC IS RC AT 5
NSPEC IS RC AT 7
NSPEC IS RC AT 8
CONNECT IS E1 RC AT 1
CONNECT IS E2 RC AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L41 13 SEA FILE=REGISTRY SUB=L29 SSS FUL L39

100.0% PROCESSED 14 ITERATIONS
SEARCH TIME: 00.00.01

13 ANSWERS

=> file zcaplus

FILE 'ZCAPLUS' ENTERED AT 11:56:56 ON 19 NOV 2003

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=> d l16 1-7 cbib abs hitstr hitrn

L16 ANSWER 1 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1997:611060 Document No. 127:293322 DSC study of the reaction of tert-butyl hydroperoxide with thioorganostannic derivatives. Bevilacqua, M.; Pereyre, M.; Maillard, B. (Lab. de Chim. Organique et Organometallique, URA 35 CNRS, Univ. Bordeaux I, Talence, 33405, Fr.). Thermochimica Acta, 297(1-2), 151-160 (French) 1997. CODEN: THACAS. ISSN: 0040-6031. Publisher: Elsevier.

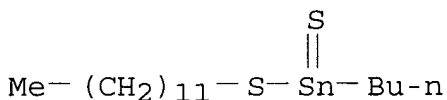
AB The decompn. of tBuOOH in di-Bu phthalate by 16 thioorganostannic derivs. (Bu₂Sn(SR)₂ (R = CH₂CO₂Me, Bu, CH₂CH₂CO₂CH₂Et (C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇); R₁Sn(S)SBu (R₁ = Bu, C₈H₁₇); BuSn(S)SR₂ (R₂ = CH₂CH₂CO₂CH₂Et (C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇, C₁₂H₂₅); Bu₃SnSCH₂CO₂C₁₈H₃₇; BuSn(SCH₂CO₂C₁₈H₃₇)₃; Sn(SCH₂CO₂C₁₈H₃₇)₄; Bu₃SnSSnBu₃; (Bu₂SnS)₃), some of which are known stabilizers of polyolefins, was studied by temp. programmed DSC. The degrdn. involves various successive reactions and certain produced thioorganostannic compds. are capable of catalyzing the decompn. of tBuOOH.

IT 182221-37-0, Butyl(dodecylthio)(thio)stannane
182221-39-2, Butyl(octadecyloxycarbonylmethylthio)tin sulfide

(DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

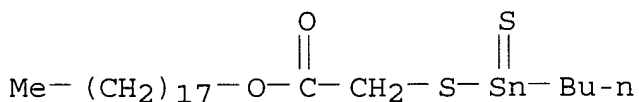
RN 182221-37-0 ZCAPLUS

CN Stannane, butyl(dodecylthio)thioxo- (9CI) (CA INDEX NAME)



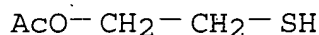
RN 182221-39-2 ZCAPLUS

CN Acetic acid, [(butylthioxostannyl)thio]-, octadecyl ester (9CI) (CA INDEX NAME)

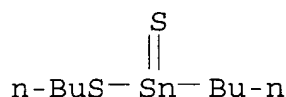


IT 5862-40-8, 2-Mercaptoethyl acetate
(for prepn. of thioorganostannic derivs.)

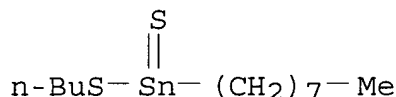
RN 5862-40-8 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



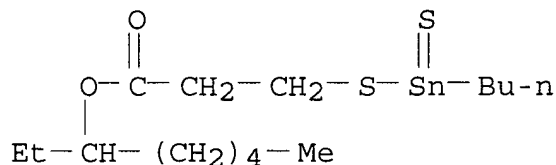
IT 182221-43-8P, Butyl(butylthio)(thio)stannane
 196940-47-3P, (Butylthio)(octyl)(thio)stannane
 196940-48-4P, Butyl(2-(1-ethylhexyloxycarbonyl)ethylthio)(thio)stannane 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane
 (prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
 RN 182221-43-8 ZCAPLUS
 CN Stannane, butyl(butylthio)thioxo- (9CI) (CA INDEX NAME)



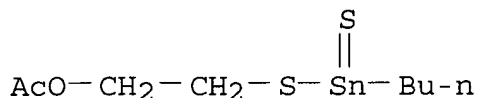
RN 196940-47-3 ZCAPLUS
 CN Stannane, (butylthio)octylthioxo- (9CI) (CA INDEX NAME)



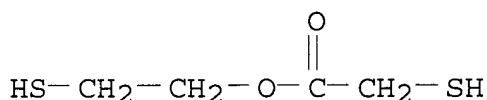
RN 196940-48-4 ZCAPLUS
 CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 1-ethylhexyl ester (9CI) (CA INDEX NAME)



RN 196940-49-5 ZCAPLUS
 CN Ethanol, 2-[(butylthioxostannyl)thio]-, acetate (9CI) (CA INDEX NAME)

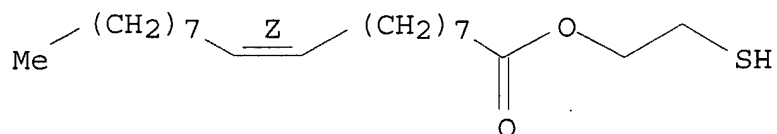


- IT 182221-37-0, Butyl(dodecylthio)(thio)stannane
 182221-39-2, Butyl(octadecyloxycarbonylmethylthio)tin sulfide
 (DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
- IT 5862-40-8, 2-Mercaptoethyl acetate
 (for prepn. of thioorganostannic derivs.)
- IT 182221-43-8P, Butyl(butylthio)(thio)stannane
 196940-47-3P, (Butylthio)(octyl)(thio)stannane
 196940-48-4P, Butyl(2-(1-ethylhexyloxycarbonyl)ethylthio)(thio)stannane 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane
 (prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
- L16 ANSWER 2 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:199211 Document No. 98:199211 Stabilizer compositions for polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958 A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US 1982-345828 19820204.
- AB Hydroxythiotin compds., SH-contg. org. compds., and optionally organotin compds. are used as heat stabilizers for halogen-contg. polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100, Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6, AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CC17H33)₂ [85758-68-5] 0.02, HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and MeSn(:S)SCH₂CH₂O₂CC17H33 [83890-15-7] 0.40 part was rolled at .apprx.193.degree., and the color changed from white to tan-orange after 8.5 min.
- IT 38705-47-4 59118-78-4 81452-26-8
 83890-15-7 85758-43-6 85758-58-3
 85758-60-7 85758-64-1 85758-65-2
 85758-67-4
 (heat stabilizers contg., for PVC)
- RN 38705-47-4 ZCAPLUS
 CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



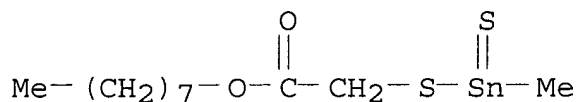
- RN 59118-78-4 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 81452-26-8 ZCAPLUS

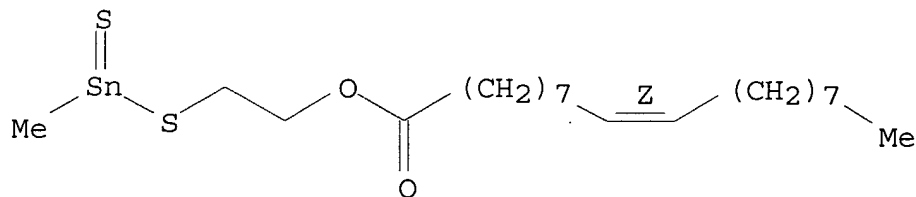
CN Acetic acid, [(methylthioxostannyl)thio]-, octyl ester (9CI) (CA INDEX NAME)



RN 83890-15-7 ZCAPLUS

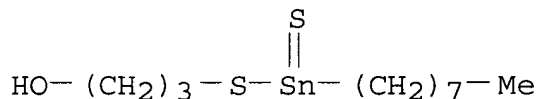
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



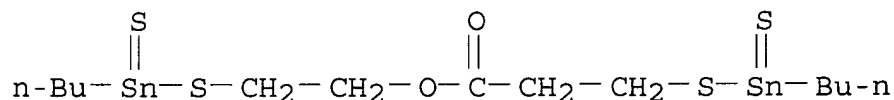
RN 85758-43-6 ZCAPLUS

CN 1-Propanol, 3-[(octylthioxostannyl)thio]- (9CI) (CA INDEX NAME)



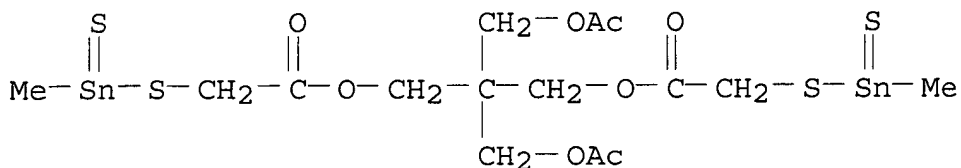
RN 85758-58-3 ZCAPLUS

CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 2-[(butylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)



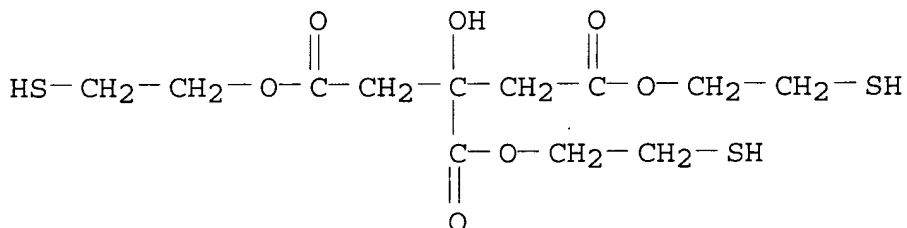
RN 85758-60-7 ZCAPLUS

CN Acetic acid, [(methylthioxostannyl)thio]-, 2,2-bis[(acetyloxy)methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



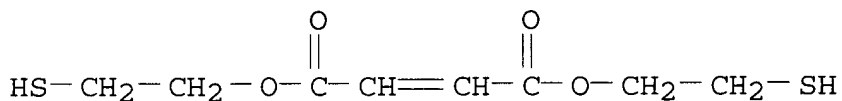
RN 85758-64-1 ZCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



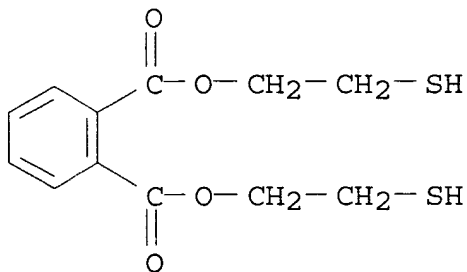
RN 85758-65-2 ZCAPLUS

CN 2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 85758-67-4 ZCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 38705-47-4 59118-78-4 81452-26-8
 83890-15-7 85758-43-6 85758-58-3
 85758-60-7 85758-64-1 85758-65-2
 85758-67-4
 (heat stabilizers contg., for PVC)

L16 ANSWER 3 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:5118 Document No. 98:5118 Polymer stabilizing compositions.
 Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab
 Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.
 PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

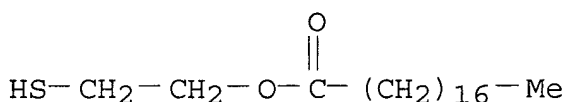
AB Effective heat stabilizers for polymers comprise .gtoreq.1
 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1
 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated
 CaCO₃ 3.0, TiO₂ 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized
 polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7]
 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were dry
 blended at 110.degree.. The mixt. was then roll milled at 193.degree.,
 the color turning from white to tan-orange in 5-6 min.

IT 27564-01-8 59118-78-4 83890-15-7
 83890-17-9

(heat stabilizer compns. contg., for PVC)

RN 27564-01-8 ZCAPLUS

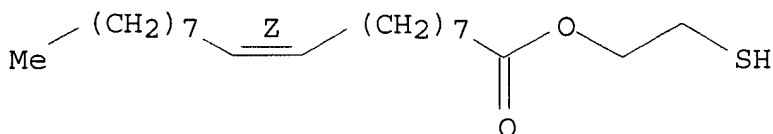
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

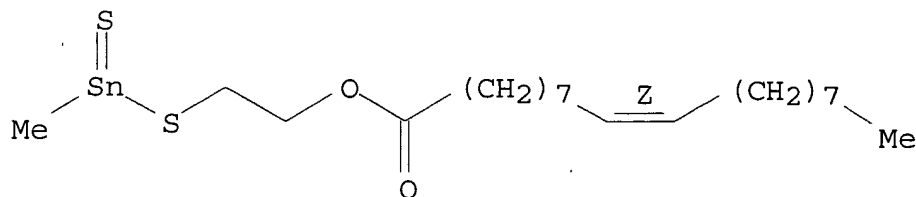
Double bond geometry as shown.



RN 83890-15-7 ZCAPLUS

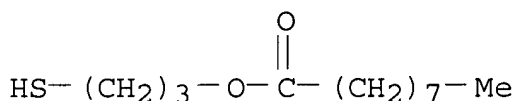
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



IT 27564-01-8 59118-78-4 83890-15-7

83890-17-9

(heat stabilizer compns. contg., for PVC)

L16 ANSWER 4 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5117 Document No. 98:5117 Polymer stabilizing compositions and their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225. PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane 0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl 3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride [993-16-8] 0.01 part were dry blended at 110.degree.. The compn. was then roll milled at 193.degree., requiring 6 min for a color change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8

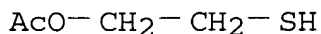
59118-78-4 83890-15-7 83890-17-9

83899-94-9

(heat stabilizer compns. contg., for PVC)

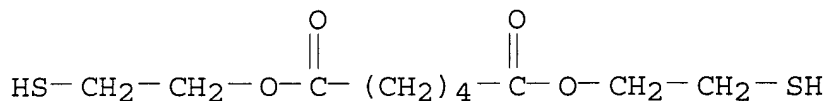
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



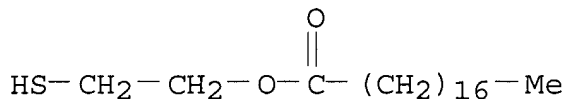
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 27564-01-8 ZCAPLUS

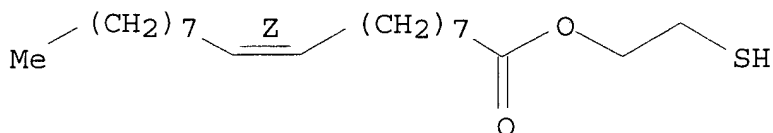
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

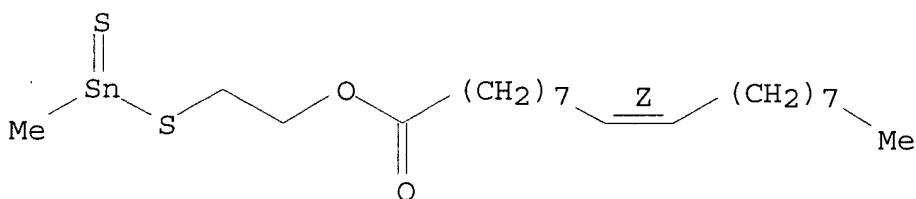
Double bond geometry as shown.



RN 83890-15-7 ZCAPLUS

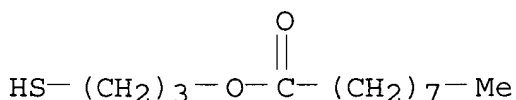
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



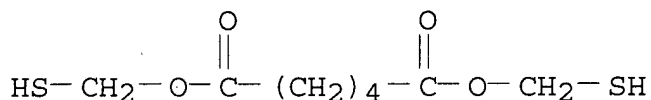
RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



RN 83899-94-9 ZCAPLUS

CN Hexanedioic acid, bis(mercaptomethyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 10194-00-0 27564-01-8
59118-78-4 83890-15-7 83890-17-9
83899-94-9

(heat stabilizer compns. contg., for PVC)

L16 ANSWER 5 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN
1982:493439 Document No. 97:93439 Sterilization of vinyl halide
polymer articles with ionizing radiations. Kornbaum, Simon;
Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP
50070 A2 19820421, 19 pp. DESIGNATED STATES: R: AT, CH, DE, GB,
NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401511
19810930. PRIORITY: FR 1980-21662 19801010.

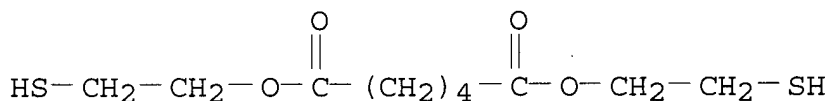
AB An organotin compd. or organoantimony compd. and a thiol (contg. 1
SH group/3-10 C) are added to PVC [9002-86-2] formulations to
inhibit degrdn. by ionizing radiation, e.g., during sterilization of
PVC containers. Thus, a PVC formulation contg. 1.5 phr
[Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr
RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3%
glycerol bis(mercaptoacetate) I) [63657-12-5] and exposed to
.gamma. radiation (2.76 Mrad). The resin was colorless. A resin
contg. no I was strongly discolored after irradiation.

IT 10194-00-0 82530-57-2 82530-58-3
82538-18-9 82554-77-6

(stabilization of PVC against ionizing radiation by)

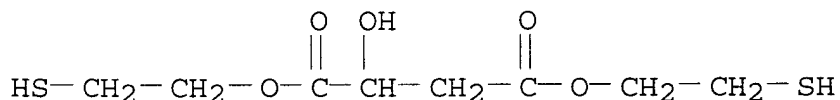
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



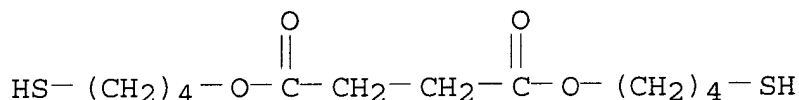
RN 82530-57-2 ZCAPLUS

CN Butanedioic acid, hydroxy-, bis(2-mercaptoethyl) ester (9CI) (CA
INDEX NAME)



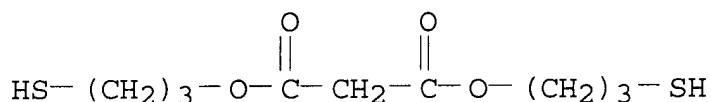
RN 82530-58-3 ZCAPLUS

CN Butanedioic acid, bis(4-mercaptobutyl) ester (9CI) (CA INDEX NAME)



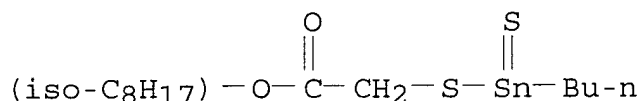
RN 82538-18-9 ZCAPLUS

CN Propanedioic acid, bis(3-mercaptopropyl) ester (9CI) (CA INDEX NAME)



RN 82554-77-6 ZCAPLUS

CN Acetic acid, [(butylthioxostannyl)thio]-, isooctyl ester (9CI) (CA INDEX NAME)

IT 10194-00-0 82530-57-2 82530-58-3
82538-18-9 82554-77-6

(stabilization of PVC against ionizing radiation by)

L16 ANSWER 6 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:493438 Document No. 97:93438 Polymers resistant against ionizing radiation. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50071 A2 19820421, 18 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401512 19810930. PRIORITY: FR 1980-21816 19801013.

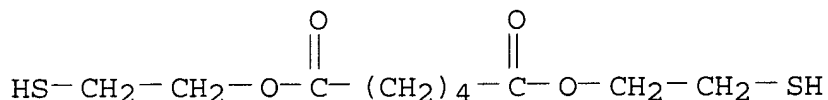
AB An organotin or organoantimony compd., a thiol, and hydroquinone (I) [123-31-9] are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3% bis(2-mercaptoethyl) adipate (II) [10194-00-0] and 0.5% I and exposed to gamma. radiation (2.76 Mrad). The resin was slightly discolored. A resin contg. no I was slightly more discolored. A resin contg. no I or II was strongly discolored.

IT 10194-00-0 27564-01-8 82554-77-6

(stabilization of PVC against ionizing radiation by)

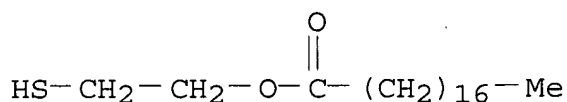
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



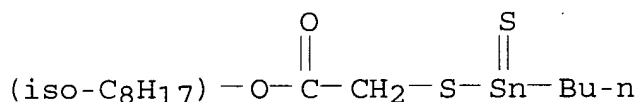
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 82554-77-6 ZCAPLUS

CN Acetic acid, [(butylthioxostannyl)thio]-, isooctyl ester (9CI) (CA INDEX NAME)



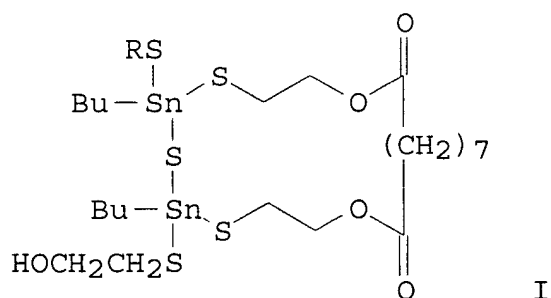
IT 10194-00-0 27564-01-8 82554-77-6

(stabilization of PVC against ionizing radiation by)

L16 ANSWER 7 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1981:47482 Document No. 94:47482 Organotin compounds and resins or polymers stabilized with them. Dworking, Robert Dally; Larkin, William Albert (M and T Chemicals Inc., USA). Eur. Pat. Appl. EP 11456 19800528, 101 pp. (English). CODEN: EPXXDW. APPLICATION: EP 1979-302520 19791109.

GI



AB Approx. 20 organotin sulfide esters were prepd. by various procedures. Thus, 0.4 mol BuSnCl₃, 0.8 mol NH₄OH, 0.2 mol

HSCH₂CH₂OH, 0.2 mol Me(CH₂)₁₁SH, 0.2 mol HSCH₂CH₂O₂C(CH₂)₇CO₂CH₂CH₂SH, and 233 mol H₂O, was heated to 70.degree. 0.5 h by 0.2 mol Na₂S addn., the mixt. heated at 75.degree. 0.5 h, and the pH adjusted to 7 with NH₄OH to give 88 g I (R = n-dodecyl). Also prepd. were [(BuSn(S)SCH₂CH₂O)]₄M (M = Si, Ti), [BuSn(S)SCH₂CH₂O)]₃M (M = B, P, Al), and I (R = CH₂CO₂(CH₂)₅CHMe₂). The compds. prepd. were useful as heat stabilizers for halogenated polymers such as PVC.

IT 76192-50-2P 76192-51-3P 76192-52-4P

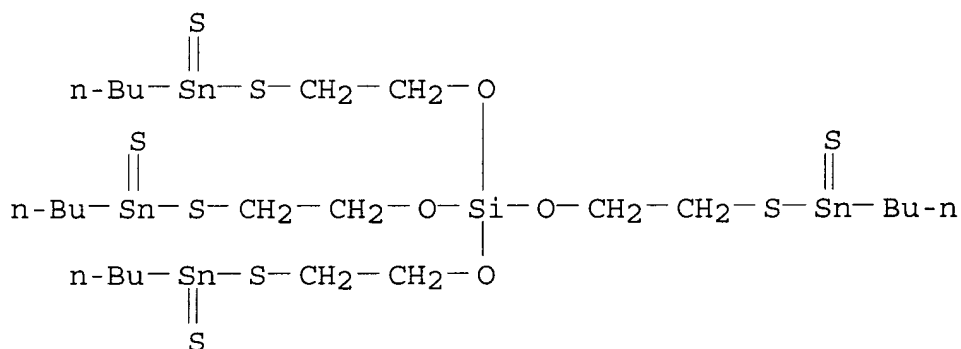
76192-53-5P 76192-54-6P 76192-55-7P

76192-56-8P 76207-93-7P 76207-96-0P

(prepn. and activity as heat stabilizer for polymers)

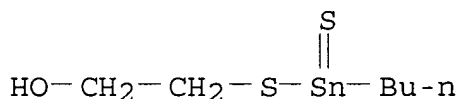
RN 76192-50-2 ZCAPLUS

CN Silicic acid (H₄SiO₄), tetrakis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI) (CA INDEX NAME)



RN 76192-51-3 ZCAPLUS

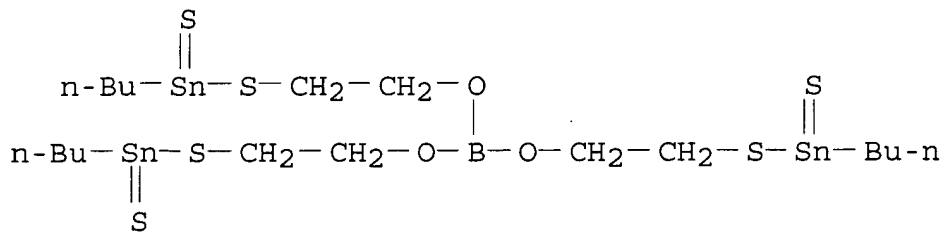
CN Ethanol, 2-[(butylthioxostannyl)thio]-, titanium(4+) salt (9CI) (CA INDEX NAME)



● 1/4 Ti(IV)

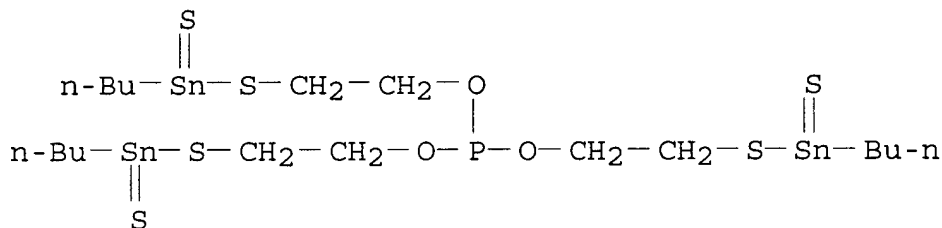
RN 76192-52-4 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, triester with boric acid (H₃BO₃) (9CI) (CA INDEX NAME)



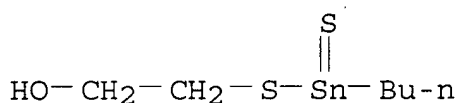
RN 76192-53-5 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, phosphite (3:1) (9CI) (CA INDEX NAME)



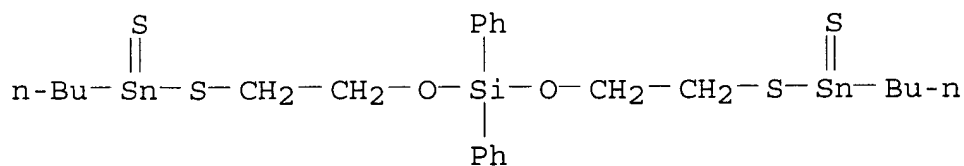
RN 76192-54-6 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, aluminum salt (9CI) (CA INDEX NAME)



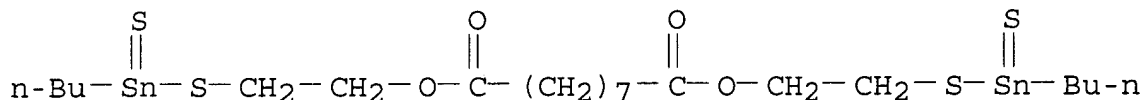
● 1/3 Al

RN 76192-55-7 ZCAPLUS

CN 9,11-Dioxa-6,14-dithia-10-sila-5,15-distannanonadecane,
10,10-diphenyl-5,15-dithioxo- (9CI) (CA INDEX NAME)

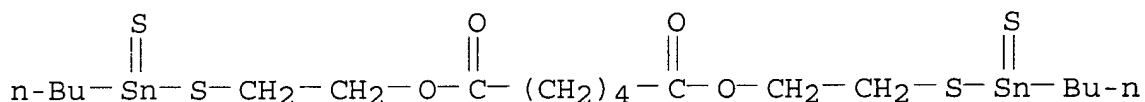
RN 76192-56-8 ZCAPLUS

CN Nonanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)



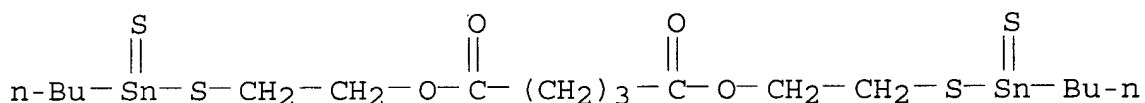
RN 76207-93-7 ZCAPLUS

CN Hexanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)



RN 76207-96-0 ZCAPLUS

CN Pentanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)

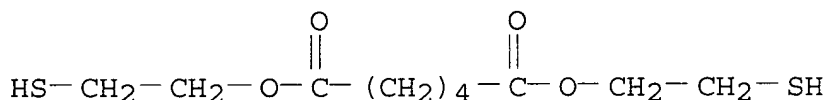


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

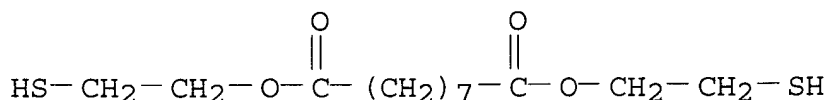
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 76192-50-2P 76192-51-3P 76192-52-4P

76192-53-5P 76192-54-6P 76192-55-7P

76192-56-8P 76207-93-7P 76207-96-0P

IT (prepn. and activity as heat stabilizer for polymers)
10194-00-0 76192-65-9
 (reaction of, with butyltin chlorides)

=> d l16 1-7 cbib abs hitstr hitrn

L16 ANSWER 1 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1997:611060 Document No. 127:293322 DSC study of the reaction of tert-butyl hydroperoxide with thioorganostannic derivatives. Bevilacqua, M.; Pereyre, M.; Maillard, B. (Lab. de Chim. Organique et Organometallique, URA 35 CNRS, Univ. Bordeaux I, Talence, 33405, Fr.). Thermochemica Acta, 297(1-2), 151-160 (French) 1997. CODEN: THACAS. ISSN: 0040-6031. Publisher: Elsevier.

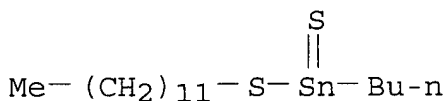
AB The decompn. of tBuOOH in di-Bu phthalate by 16 thioorganostannic derivs. (Bu₂Sn(SR)₂ (R = CH₂CO₂Me, Bu, CH₂CH₂CO₂CH₂Et (C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇); R₁Sn(S)SBu (R₁ = Bu, C₈H₁₇); BuSn(S)SR₂ (R₂ = CH₂CH₂CO₂CH₂Et (C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇, C₁₂H₂₅); Bu₃SnSCH₂CO₂C₁₈H₃₇; BuSn(SCH₂CO₂C₁₈H₃₇)₃; Sn(SCH₂CO₂C₁₈H₃₇)₄; Bu₃SnSSnBu₃; (Bu₂SnS)₃), some of which are known stabilizers of polyolefins, was studied by temp. programmed DSC. The degrdn. involves various successive reactions and certain produced thioorganostannic compds. are capable of catalyzing the decompn. of tBuOOH.

IT 182221-37-0, Butyl(dodecylthio)(thio)stannane
182221-39-2, Butyl(octadecyloxycarbonylmethylthio)tin sulfide

(DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

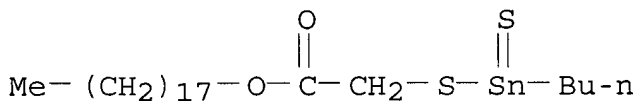
RN 182221-37-0 ZCAPLUS

CN Stannane, butyl(dodecylthio)thioxo- (9CI) (CA INDEX NAME)



RN 182221-39-2 ZCAPLUS

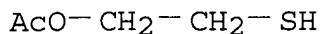
CN Acetic acid, [(butylthioxostannyl)thio]-, octadecyl ester (9CI) (CA INDEX NAME)



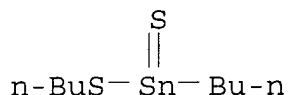
IT 5862-40-8, 2-Mercaptoethyl acetate
(for prepn. of thioorganostannic derivs.)

RN 5862-40-8 ZCAPLUS

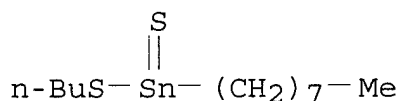
CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



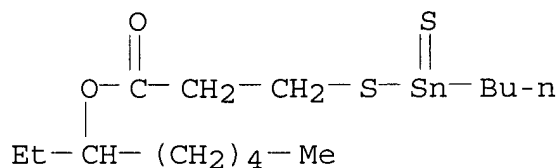
IT 182221-43-8P, Butyl(butylthio)(thio)stannane
 196940-47-3P, (Butylthio)(octyl)(thio)stannane
 196940-48-4P, Butyl(2-(1-ethylhexyloxycarbonyl)ethylthio)(thio)stannane 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane
 (prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
 RN 182221-43-8 ZCAPLUS
 CN Stannane, butyl(butylthio)thioxo- (9CI) (CA INDEX NAME)



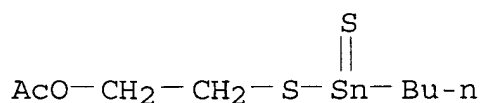
RN 196940-47-3 ZCAPLUS
 CN Stannane, (butylthio)octylthioxo- (9CI) (CA INDEX NAME)



RN 196940-48-4 ZCAPLUS
 CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 1-ethylhexyl ester (9CI) (CA INDEX NAME)



RN 196940-49-5 ZCAPLUS
 CN Ethanol, 2-[(butylthioxostannyl)thio]-, acetate (9CI) (CA INDEX NAME)



IT 182221-37-0, Butyl(dodecylthio)(thio)stannane

182221-39-2, Butyl(octadecyloxycarbonylmethylthio)tin sulfide

(DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

IT 5862-40-8, 2-Mercaptoethyl acetate

(for prepn. of thioorganostannic derivs.)

IT 182221-43-8P, Butyl(butylthio)(thio)stannane

196940-47-3P, (Butylthio)(octyl)(thio)stannane

196940-48-4P, Butyl(2-(1-ethylhexyloxycarbonyl)ethylthio)(thio)stannane 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane

(prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

L16 ANSWER 2 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:199211 Document No. 98:199211 Stabilizer compositions for polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958 A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US 1982-345828 19820204.

AB Hydroxythiotin compds., SH-contg. org. compds., and optionally organotin compds. are used as heat stabilizers for halogen-contg. polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100, Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6, AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CC17H33)₂ [85758-68-5] 0.02, HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and MeSn(:S)SCH₂CH₂O₂CC17H33 [83890-15-7] 0.40 part was rolled at .apprx.193.degree., and the color changed from white to tan-orange after 8.5 min.

IT 38705-47-4 59118-78-4 81452-26-8

83890-15-7 85758-43-6 85758-58-3

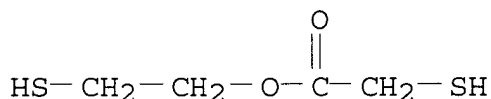
85758-60-7 85758-64-1 85758-65-2

85758-67-4

(heat stabilizers contg., for PVC)

RN 38705-47-4 ZCAPLUS

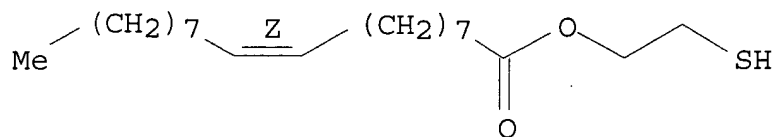
CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

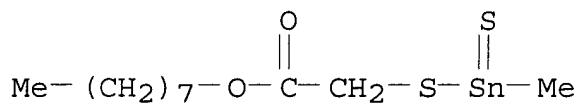
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 81452-26-8 ZCAPLUS

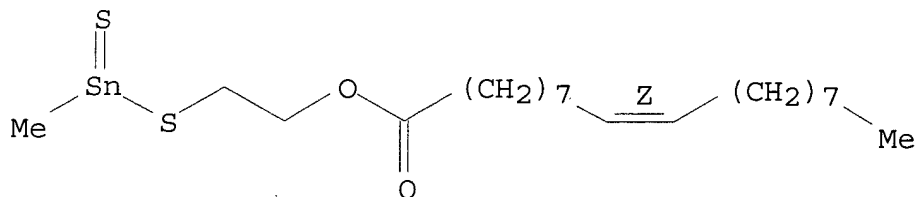
CN Acetic acid, [(methylthioxostannyl)thio]-, octyl ester (9CI) (CA INDEX NAME)



RN 83890-15-7 ZCAPLUS

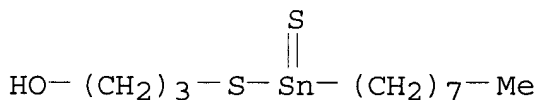
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



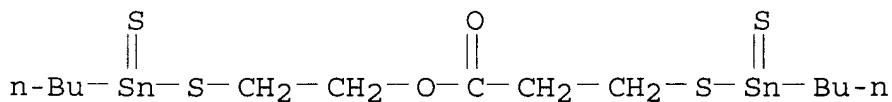
RN 85758-43-6 ZCAPLUS

CN 1-Propanol, 3-[(octylthioxostannyl)thio]- (9CI) (CA INDEX NAME)



RN 85758-58-3 ZCAPLUS

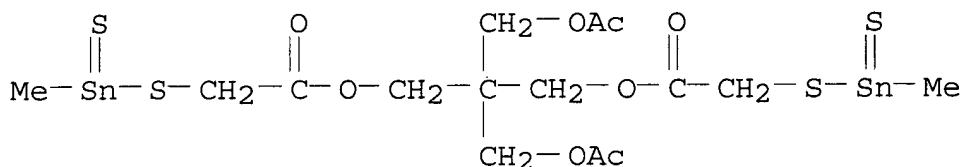
CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 2-[(butylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)



RN 85758-60-7 ZCAPLUS

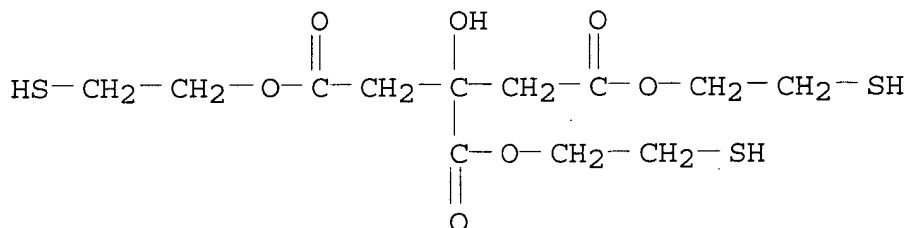
CN Acetic acid, [(methylthioxostannyl)thio]-, 2,2-

bis[(acetyloxy)methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



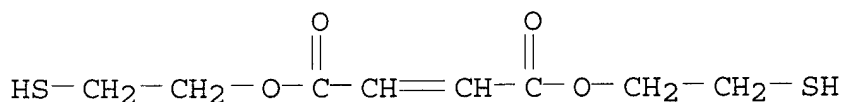
RN 85758-64-1 ZCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



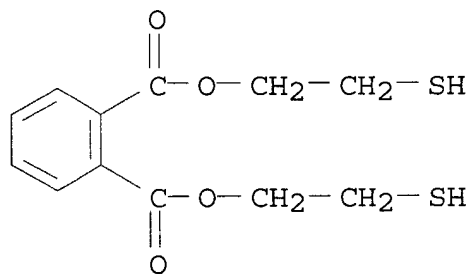
RN 85758-65-2 ZCAPLUS

CN 2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 85758-67-4 ZCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 38705-47-4 59118-78-4 81452-26-8

83890-15-7 85758-43-6 85758-58-3

85758-60-7 85758-64-1 85758-65-2

85758-67-4

(heat stabilizers contg., for PVC)

L16 ANSWER 3 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5118 Document No. 98:5118 Polymer stabilizing compositions.

Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.

DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.

(English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.

PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

AB Effective heat stabilizers for polymers comprise .gtoreq.1 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were dry blended at 110.degree.. The mixt. was then roll milled at 193.degree., the color turning from white to tan-orange in 5-6 min.

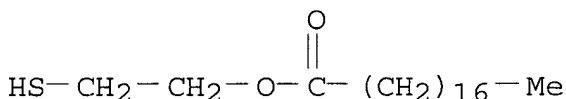
IT 27564-01-8 59118-78-4 83890-15-7

83890-17-9

(heat stabilizer compns. contg., for PVC)

RN 27564-01-8 ZCAPLUS

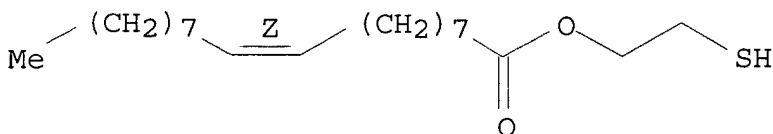
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

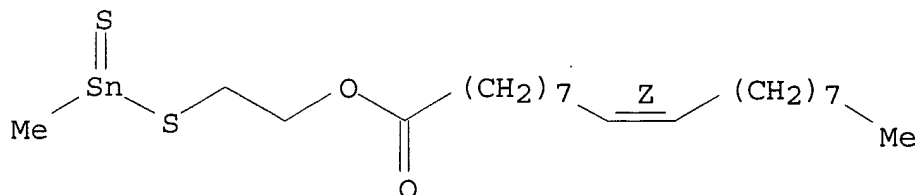
Double bond geometry as shown.



RN 83890-15-7 ZCAPLUS

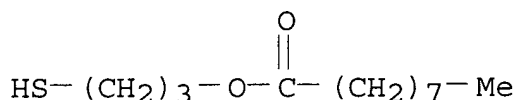
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



IT 27564-01-8 59118-78-4 83890-15-7

83890-17-9

(heat stabilizer compns. contg., for PVC)

L16 ANSWER 4 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5117 Document No. 98:5117 Polymer stabilizing compositions and their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225. PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane 0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO3 3.0, TiO2 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl 3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride [993-16-8] 0.01 part were dry blended at 110.degree.. The compn. was then roll milled at 193.degree., requiring 6 min for a color change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8

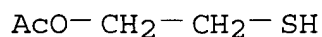
59118-78-4 83890-15-7 83890-17-9

83899-94-9

(heat stabilizer compns. contg., for PVC)

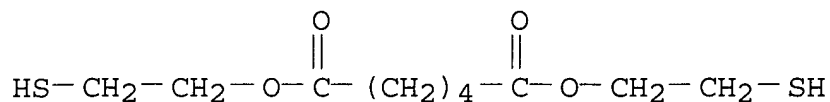
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



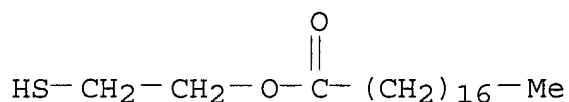
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 27564-01-8 ZCAPLUS

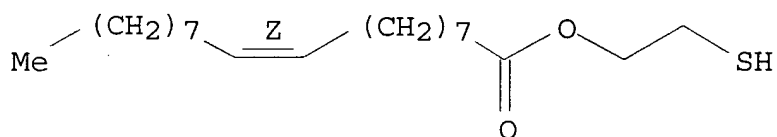
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

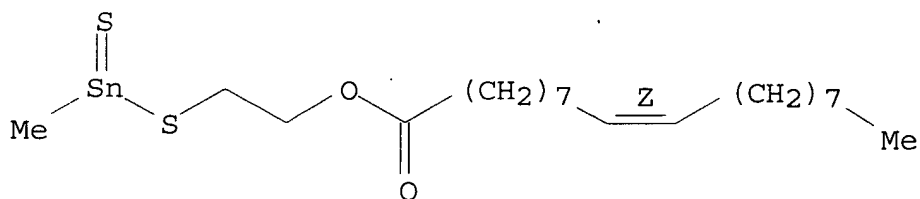
Double bond geometry as shown.



RN 83890-15-7 ZCAPLUS

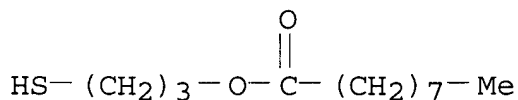
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



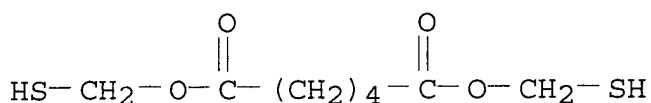
RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 83899-94-9 ZCAPLUS

CN Hexanedioic acid, bis(mercaptomethyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 10194-00-0 27564-01-8
59118-78-4 83890-15-7 83890-17-9
83899-94-9

(heat stabilizer compns. contg., for PVC)

L16 ANSWER 5 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN
1982:493439 Document No. 97:93439 Sterilization of vinyl halide
polymer articles with ionizing radiations. Kornbaum, Simon;
Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP
50070 A2 19820421, 19 pp. DESIGNATED STATES: R: AT, CH, DE, GB,
NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401511
19810930. PRIORITY: FR 1980-21662 19801010.

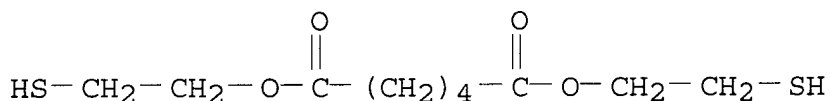
AB An organotin compd. or organoantimony compd. and a thiol (contg. 1
SH group/3-10 C) are added to PVC [9002-86-2] formulations to
inhibit degrdn. by ionizing radiation, e.g., during sterilization of
PVC containers. Thus, a PVC formulation contg. 1.5 phr
[Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr
RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3%
glycerol bis(mercaptoacetate) I) [63657-12-5] and exposed to
.gamma. radiation (2.76 Mrad). The resin was colorless. A resin
contg. no I was strongly discolored after irradiation.

IT 10194-00-0 82530-57-2 82530-58-3
82538-18-9 82554-77-6

(stabilization of PVC against ionizing radiation by)

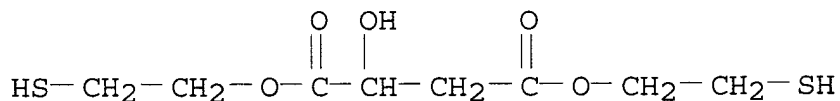
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



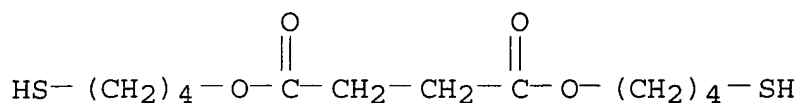
RN 82530-57-2 ZCAPLUS

CN Butanedioic acid, hydroxy-, bis(2-mercaptoethyl) ester (9CI) (CA
INDEX NAME)



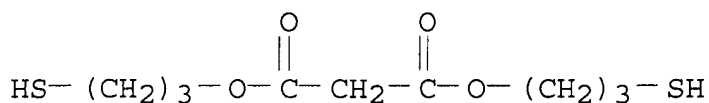
RN 82530-58-3 ZCAPLUS

CN Butanedioic acid, bis(4-mercaptobutyl) ester (9CI) (CA INDEX NAME)



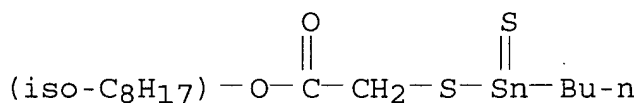
RN 82538-18-9 ZCAPLUS

CN Propanedioic acid, bis(3-mercaptopropyl) ester (9CI) (CA INDEX NAME)



RN 82554-77-6 ZCAPLUS

CN Acetic acid, [(butylthioxostannyl)thio]-, isooctyl ester (9CI) (CA INDEX NAME)



IT 10194-00-0 82530-57-2 82530-58-3
82538-18-9 82554-77-6

(stabilization of PVC against ionizing radiation by)

L16 ANSWER 6 OF 7 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:493438 Document No. 97:93438 Polymers resistant against ionizing radiation. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50071 A2 19820421, 18 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401512 19810930. PRIORITY: FR 1980-21816 19801013.

AB An organotin or organoantimony compd., a thiol, and hydroquinone (I) [123-31-9] are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3% bis(2-mercaptoethyl) adipate (II) [10194-00-0] and 0.5% I and exposed to gamma. radiation (2.76 Mrad). The resin was slightly discolored. A resin contg. no I was slightly more discolored. A resin contg. no I or II was strongly discolored.

IT 10194-00-0 27564-01-8 82554-77-6

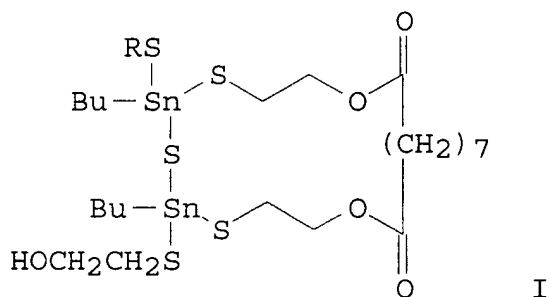
(stabilization of PVC against ionizing radiation by)

RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



GI



AB Approx. 20 organotin sulfide esters were prepd. by various

procedures. Thus, 0.4 mol BuSnCl₃, 0.8 mol NH₄OH, 0.2 mol HSCH₂CH₂OH, 0.2 mol Me(CH₂)₁₁SH, 0.2 mol HSCH₂CH₂O₂C(CH₂)₇CO₂CH₂CH₂SH, and 233 mol H₂O, was heated to 70.degree. 0.5 h by 0.2 mol Na₂S addn., the mixt. heated at 75.degree. 0.5 h, and the pH adjusted to 7 with NH₄OH to give 88 g I (R = n-dodecyl). Also prepd. were [(BuSn(S)SCH₂CH₂O)]₄M (M = Si, Ti), [BuSn(S)SCH₂CH₂O)]₃M (M = B, P, Al), and I (R = CH₂CO₂(CH₂)₅CHMe₂). The compds. prepd. were useful as heat stabilizers for halogenated polymers such as PVC.

IT 76192-50-2P 76192-51-3P 76192-52-4P

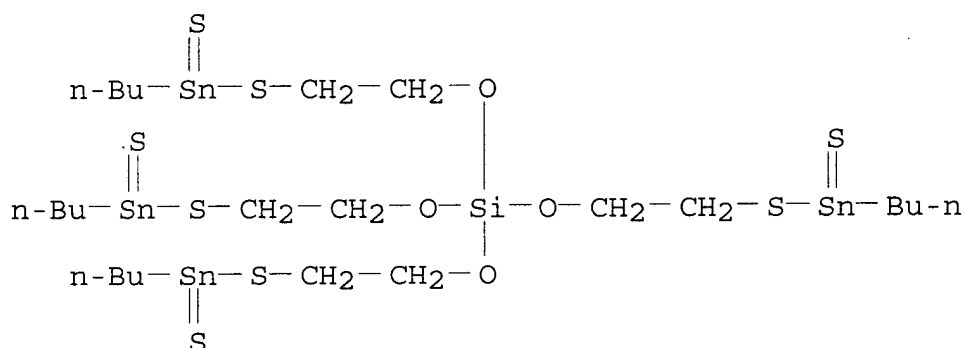
76192-53-5P 76192-54-6P 76192-55-7P

76192-56-8P 76207-93-7P 76207-96-0P

(prepn. and activity as heat stabilizer for polymers)

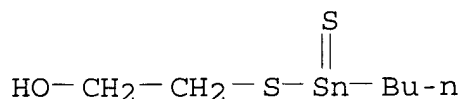
RN 76192-50-2 ZCAPLUS

CN Silicic acid (H₄SiO₄), tetrakis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI) (CA INDEX NAME)



RN 76192-51-3 ZCAPLUS

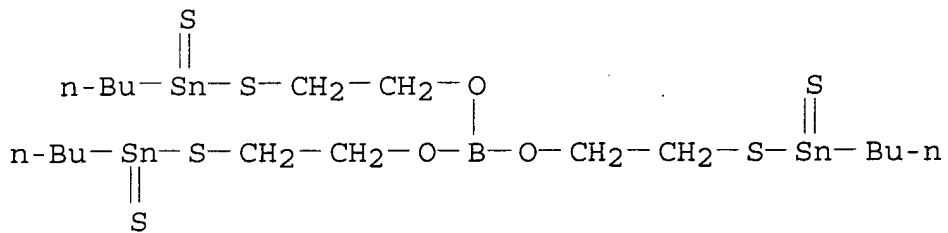
CN Ethanol, 2-[(butylthioxostannyl)thio]-, titanium(4+) salt (9CI) (CA INDEX NAME)



● 1/4 Ti(IV)

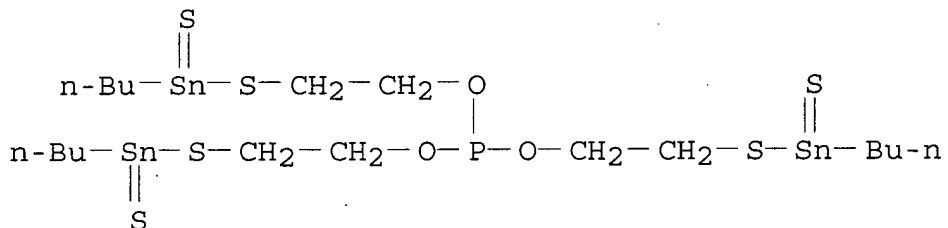
RN 76192-52-4 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, triester with boric acid (H₃BO₃) (9CI) (CA INDEX NAME)



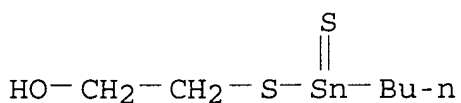
RN 76192-53-5 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, phosphite (3:1) (9CI) (CA INDEX NAME)



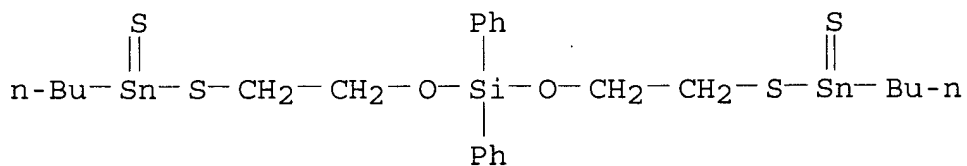
RN 76192-54-6 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, aluminum salt (9CI) (CA INDEX NAME)



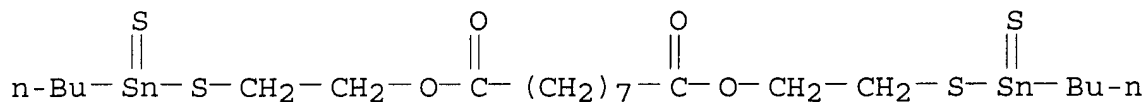
● 1/3 Al

RN 76192-55-7 ZCAPLUS

CN 9,11-Dioxa-6,14-dithia-10-sila-5,15-distannanonadecane,
10,10-diphenyl-5,15-dithioxo- (9CI) (CA INDEX NAME)

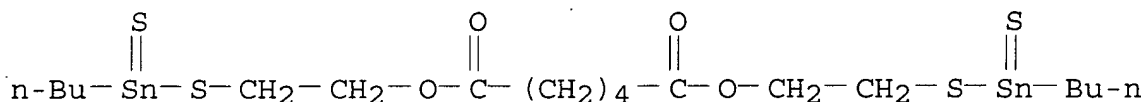
RN 76192-56-8 ZCAPLUS

CN Nonanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)



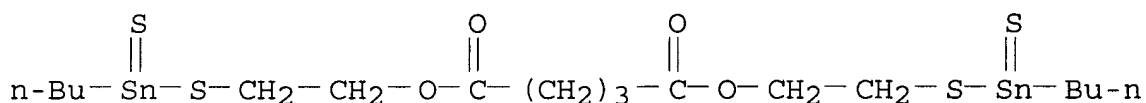
RN 76207-93-7 ZCAPLUS

CN Hexanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)



RN 76207-96-0 ZCAPLUS

CN Pentanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester
(9CI) (CA INDEX NAME)

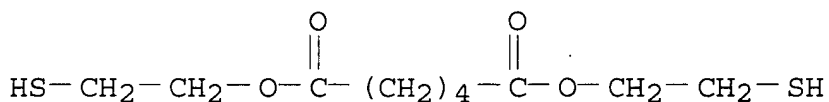


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

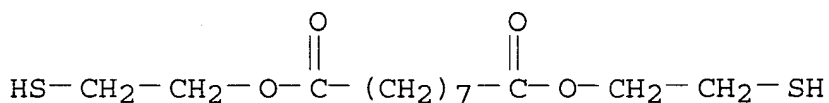
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 76192-50-2P 76192-51-3P 76192-52-4P

76192-53-5P 76192-54-6P 76192-55-7P

76192-56-8P 76207-93-7P 76207-96-0P

IT 10194-00-0 76192-65-9
(prepn. and activity as heat stabilizer for polymers)
(reaction of, with butyltin chlorides)

=>^d l21 1-32 cbib abs hitstr hitrn

L21 ANSWER 1 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

2000:367068 Document No. 133:5428 Stabilized clear halogenated polymer compositions and organotin-phenyl salicylate heat-, light-, and weathering-stabilizer compositions therefor. Conroy, Gary Martin; Norris, Gene Kelly (Rohm and Haas Company, USA). Eur. Pat. Appl. EP 1004625 A1 20000531, 19 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-309120 19991116. PRIORITY: US 1998-199974 19981125.

AB Stabilizer compns. for protecting clear PVC and other clear halogenated polymer compns. against discoloration and degrdn. by light and weathering in addn. to heat comprise an organotin compd. selected from the group consisting of organotin mercaptides, sulfides of organotin mercaptides, organotin sulfides, and/or organotin carboxylates, and a free Ph salicylate compd. Thus, moldings comprising PVC 100, impact modifier 6.0, process aid 1.5, ester wax lubricant 1.7, oxidized polyethylene lubricant 0.2, epoxidized soybean oil 1.0, Advastab TM 181 1.2, and Ph salicylate (I) 0.1 part was weathered 960 h at 50.degree. (alternating 4 h UV exposure and 4 h moisture condensation cycles), showing color change at 160, 320, 480, 640, 800, and 960 h 2.2, 4.7, 9.8, 9.9, 10.0, and 9.6, resp., compared with 2.7, 5.9, 10.7, 11.5, 12.3, and 13.6, resp., without I.

IT 271249-34-4, Advastab TM 181
(Advastab TM 181; synergistic organotin-Ph salicylate heat-, light-, and weathering-stabilizer compns. for clear halogenated polymer compns.)

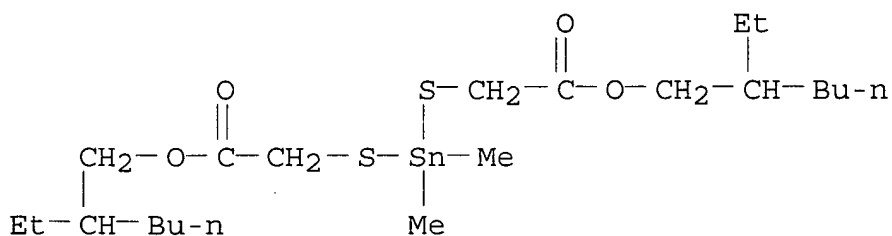
RN 271249-34-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 10-ethyl-4,4-dimethyl-7-oxo-, 2-ethylhexyl ester, mixt. with 2-ethylhexyl hydrogen 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-methyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (9CI) (CA INDEX NAME)

CM 1

CRN 57583-35-4

CMF C22 H44 O4 S2 Sn



CM 2

$$\begin{array}{c}
 \text{Et}-\text{CH}-\text{Bu-n} \\
 | \\
 \text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}-\text{CH}_2-\text{S}-\text{Sn}-\text{Me} \\
 | \qquad \qquad \qquad | \\
 \text{S}-\text{CH}_2-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}(\text{Et})-\text{Bu-n} \\
 | \qquad \qquad \qquad | \\
 \text{S}-\text{CH}_2-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}(\text{Et})-\text{Bu-n}
 \end{array}$$
$$\text{HS}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}{\text{C}}-(\text{CH}_2)_6-\text{Me}$$
$$\text{HS}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}-(\text{CH}_2)_8-\text{Me}$$

IT 271249-34-4, Advastab TM 181
(Advastab TM 181; synergistic organotin-Ph salicylate heat-,
light-, and weathering-stabilizer compns. for clear halogenated
polymer compns.)

IT 57813-59-9D, 2-Mercaptoethyl octanoate, reaction products
with mercapto and tin compds. 68928-33-6D, 2-Mercaptoethyl
decanoate, reaction products with mercapto and tin compds.
(synergistic organotin-Ph salicylate heat-, light-, and
weathering-stabilizer compns. for clear halogenated polymer
compns.)

tert-butyl hydroperoxide with thioorganostannic derivatives.
Bevilacqua, M.; Pereyre, M.; Maillard, B. (Lab. de Chim. Organique et Organometallique, URA 35 CNRS, Univ. Bordeaux I, Talence, 33405, Fr.). *Thermochimica Acta*, 297(1-2), 151-160 (French) 1997. CODEN: THACAS. ISSN: 0040-6031. Publisher: Elsevier.

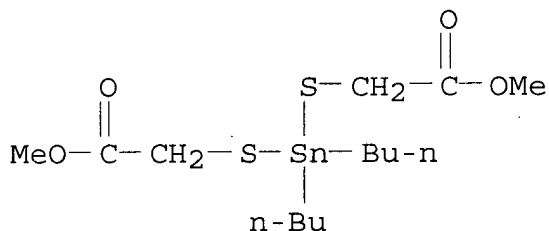
AB The decompn. of tBuOOH in di-Bu phthalate by 16 thioorganostannic derivs. (Bu₂Sn(SR)₂ (R = CH₂CO₂Me, Bu, CH₂CH₂CO₂CH₂Et(C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇); R₁Sn(S)SBu (R₁ = Bu, C₈H₁₇); BuSn(S)SR₂ (R₂ = CH₂CH₂CO₂CH₂Et(C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇, C₁₂H₂₅); Bu₃SnSCH₂CO₂C₁₈H₃₇; BuSn(SCH₂CO₂C₁₈H₃₇)₃; Sn(SCH₂CO₂C₁₈H₃₇)₄; Bu₃SnSSnBu₃; (Bu₂SnS)₃), some of which are known stabilizers of polyolefins, was studied by temp. programmed DSC. The degrdn. involves various successive reactions and certain produced thioorganostannic compds. are capable of catalyzing the decompn. of tBuOOH.

IT 27574-38-5, Dibutylbis(methyl thioglycolato)stannane
32251-23-3, Dibutylbis(octadecyloxycarbonylmethylthio)stannane
57414-19-4, Butyltris(octadecyloxycarbonylmethylthio)stannane

(DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

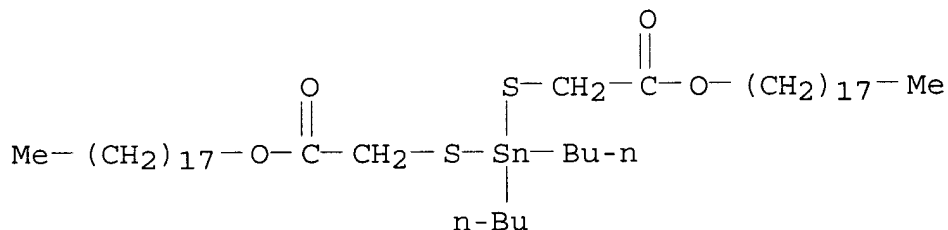
RN 27574-38-5 ZCAPLUS

CN 2-Oxa-5,7-dithia-6-stannanonan-9-oic acid, 6,6-dibutyl-3-oxo-, methyl ester (9CI) (CA INDEX NAME)



RN 32251-23-3 ZCAPLUS

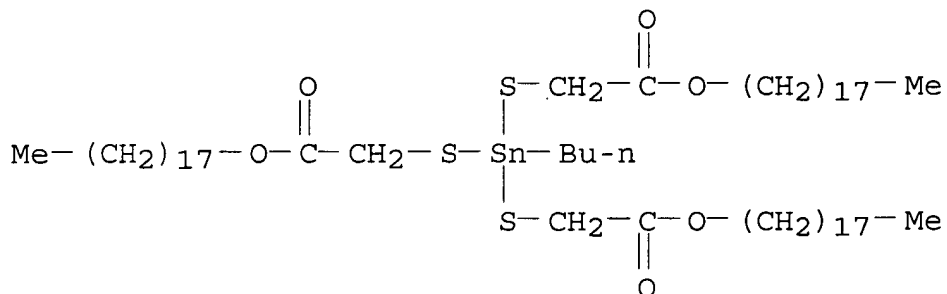
CN 8-Oxa-3,5-dithia-4-stannahexacosanoic acid, 4,4-dibutyl-7-oxo-, octadecyl ester (9CI) (CA INDEX NAME)



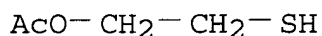
RN 57414-19-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexacosanoic acid, 4-butyl-4-[[2-(octadecyloxy)-2-oxoethyl]thio]-7-oxo-, octadecyl ester (9CI) (CA

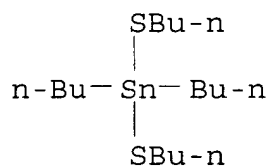
INDEX NAME)



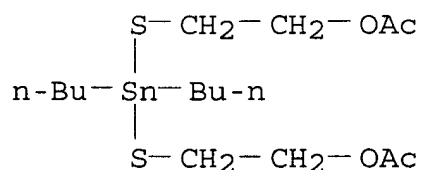
IT 5862-40-8, 2-Mercaptoethyl acetate
 (for prepn. of thioorganostannic derivs.)
 RN 5862-40-8 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



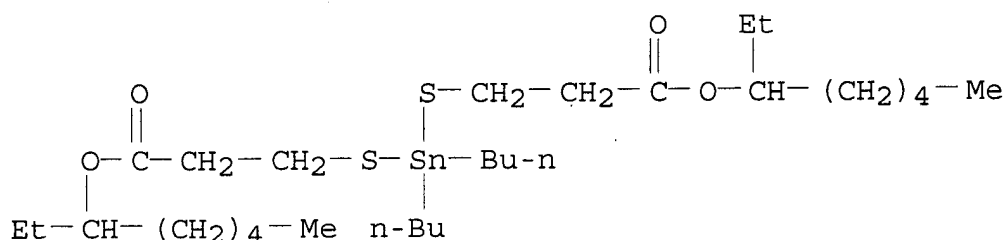
IT 3065-53-0P, Dibutylbis(butylthio)stannane
 67874-47-9P, Bis(2-acetoxyethylthio)dibutylstannane
 196940-46-2P, Dibutylbis(2-(1-ethylhexyloxycarbonyl)ethylthio)stannane
 (prepn. and reaction; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
 RN 3065-53-0 ZCAPLUS
 CN Stannane, dibutylbis(butylthio)- (8CI, 9CI) (CA INDEX NAME)



RN 67874-47-9 ZCAPLUS
 CN 8-Oxa-3,5-dithia-4-stannadecan-1-ol, 4,4-dibutyl-9-oxo-, acetate
 (9CI) (CA INDEX NAME)



RN 196940-46-2 ZCAPLUS
 CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5,5-dibutyl-11-ethyl-9-oxo-, 1-ethylhexyl ester (9CI) (CA INDEX NAME)



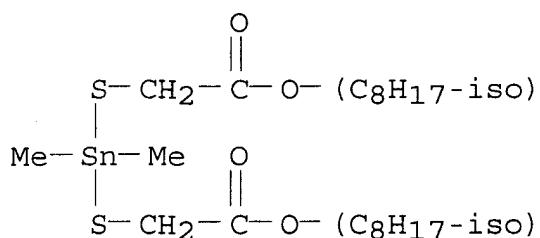
IT 27574-38-5, Dibutylbis(methyl thioglycolato)stannane
 32251-23-3, Dibutylbis(octadecyloxycarbonylmethylthio)stannane
 57414-19-4, Butyltris(octadecyloxycarbonylmethylthio)stannane
 (DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
 IT 5862-40-8, 2-Mercaptoethyl acetate
 (for prepn. of thioorganostannic derivs.)
 IT 3065-53-0P, Dibutylbis(butylthio)stannane
 67874-47-9P, Bis(2-acetoxyethylthio)dibutylstannane
 196940-46-2P, Dibutylbis(2-(1-ethylhexyloxycarbonyl)ethylthio)stannane
 (prepn. and reaction; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

L21 ANSWER 3 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1996:11343 Document No. 124:89107 Thermally stable chlorine-containing resin compositions with good processability. Tsujimoto, Hideo; Ogata, Koichi (Sakai Chemical Industry Co, Japan). Jpn. Kokai Tokkyo Koho JP 07268157 A2 19951017 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-95397 19940328.

AB The compns. contain Ca(OH)₂, 2-mercaptoethanol fatty acid esters, and S-contg. alkyltin compds. Thus, a compn. contg. PVC 100, Ca(OH)₂ 0.5, di-n-octyltin bis(isooctylthioglycolate) 0.4, monobutyltin sulfide 0.1, 2-mercaptoethanol oleate 0.5, and other additives 4.5 parts could be extrusion-molded at output 26.0 kg/h and gave moldings with good appearance.

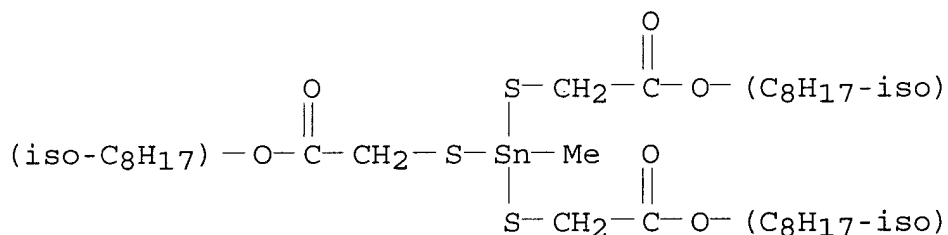
IT 26636-01-1, Dimethyltin bis(isooctylthioglycolate)
 54849-38-6, Methyltin tris(isooctylthioglycolate)
 59118-78-4, 2-Mercaptoethyl oleate
 (stabilizer; thermally stable chlorine-contg. resin compns. with good processability)

RN 26636-01-1 ZCAPLUS
 CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



RN 54849-38-6 ZCAPLUS

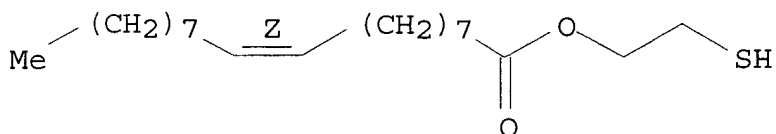
CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

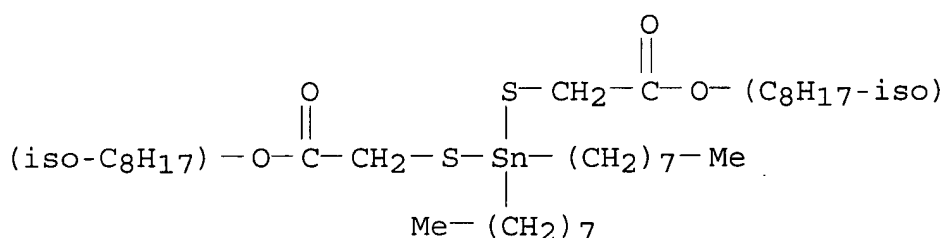


IT 26401-97-8

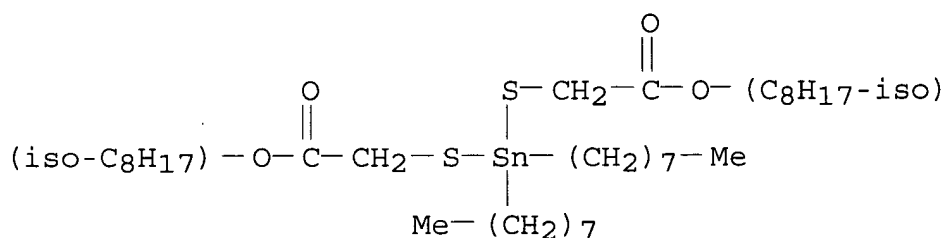
(thermally stable chlorine-contg. resin compns. with good processability)

RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

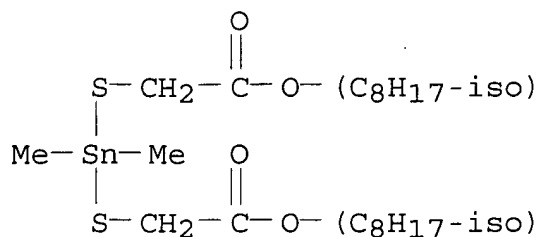


- IT 26636-01-1, Dimethyltin bis(isooctylthioglycolate)
 54849-38-6, Methyltin tris(isooctylthioglycolate)
 59118-78-4, 2-Mercaptoethyl oleate
 (stabilizer; thermally stable chlorine-contg. resin compns. with good processability)
- IT 26401-97-8
 (thermally stable chlorine-contg. resin compns. with good processability)
- L21 ANSWER 4 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1995:999813 Document No. 124:89079 Stabilizers for chlorine-containing resin compositions. Tsujimoto, Hideo; Ogata, Koichi (Sakai Chemical Industry Co, Japan). Jpn. Kokai Tokkyo Koho JP 07258491 A2 19951009 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-90464 19940322.
- AB The title compns. contain 2-mercaptoethanol fatty acid esters and S-contg. alkyltin compds. as stabilizers. Thus, PVC 100, CaCO₃ 3, SC 100 (Ca stearate) 0.5, ester lubricant 1, dioctyltin bis(isooctylthioglycolate) 1.5, and 2-mercaptoethanol oleate 0.5 part were extrusion molded to give a pipe.
- IT 26401-97-8, Dioctyltin bis(isooctyl thioglycolate)
 26636-01-1, Dimethyltin bis(isooctyl thioglycolate)
 54849-38-6 59118-78-4, 2-Mercaptoethyl oleate
 (Cl-contg. resin compns. contg. 2-mercaptoethanol fatty acid esters and S-contg. alkyltin compds. as stabilizers)
- RN 26401-97-8 ZCAPLUS
- CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



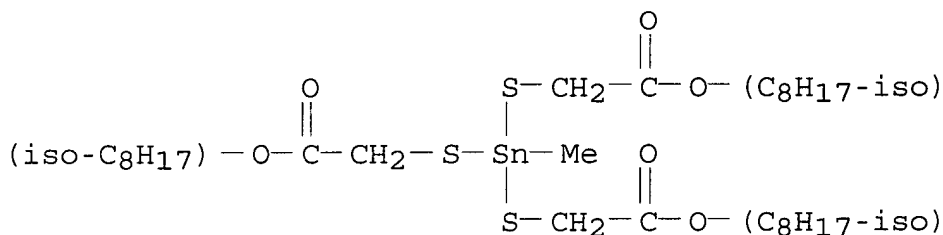
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



RN 54849-38-6 ZCAPLUS

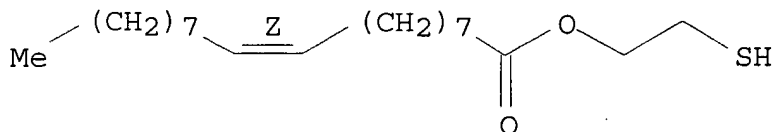
CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

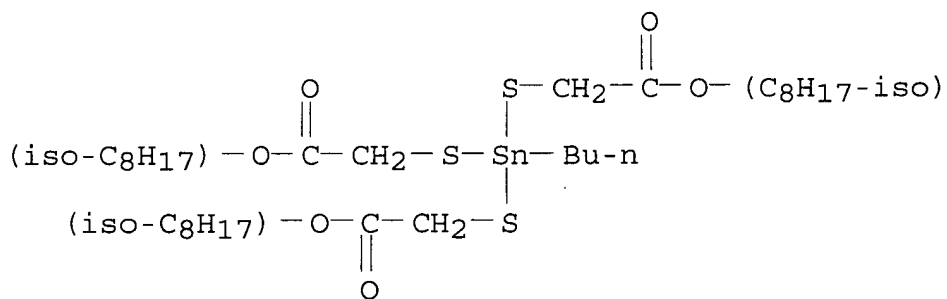


IT 26401-97-8, Dioctyltin bis(isooctyl thioglycolate)
 26636-01-1, Dimethyltin bis(isooctyl thioglycolate)
 54849-38-6 59118-78-4, 2-Mercaptoethyl oleate
 (Cl-contg. resin compns. contg. 2-mercaptoethanol fatty acid esters and S-contg. alkyltin compds. as stabilizers)

L21 ANSWER 5 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

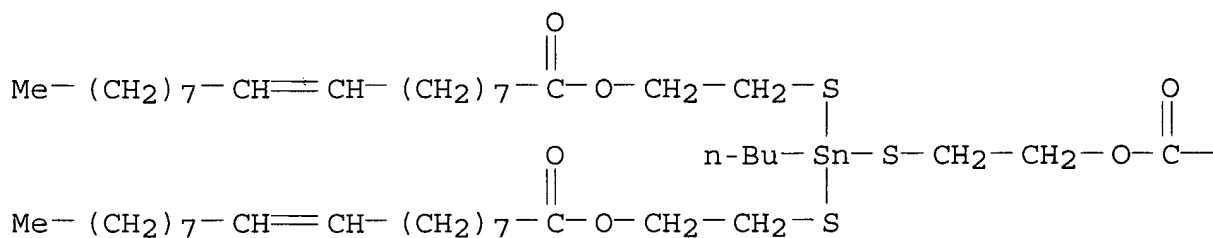
1995:205921 Document No. 122:32993 Organotin stabilizer mixture.
 Anderson, Donald F.; Walter, Steven (Akzo Nobel N.V., Neth.). U.S.
 US 5354508 A 19941011, 4 pp. (English). CODEN: USXXAM.
 APPLICATION: US 1993-160534 19931201.

- AB An organotin stabilizer mixt. comprising: (a) monoalkyltin mercaptoalc. $\text{RSn}(\text{SR}'\text{OH})_3$, wherein R is lower alkyl and R' is lower alkylene (b) a monoalkyltin mercaptoacid ester $\text{RSn}(\text{SR}'\text{CO}_2\text{R}'')_3$, where R is lower alkyl, R' is lower alkylene, and R'' is C6 to C10 alkyl; and (c) a monoalkyltin sulfide provides improved early color, lubricity, and weatherability to rigid vinyl polymer formulations. The formulation may also contain a monoalkyltin mercaptoalc. ester as an optional component.
- IT 25852-70-4P, Monobutyltin tris(isooctylthioglycolate)
67361-76-6P 70729-71-4P
(organotin stabilizer mixt.)
- RN 25852-70-4 ZCAPLUS
- CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



- RN 67361-76-6 ZCAPLUS
- CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

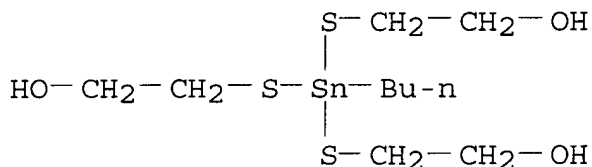


$$-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{Me}$$

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RN      70729-71-4    ZCAPLUS
CN      Ethanol, 2,2',2''-[(butylstannylidyne)tris(thio)]tris- (9CI)  (CA
INDEX NAME)

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IT 59118-78-4, 2-Mercaptoethyl oleate
    (organotin stabilizer mixt.)
RN 59118-78-4 ZCAPLUS
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX
    NAME)
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$$\text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{C}(=\text{O})\text{OCH}_2\text{CH}_2\text{SH}$$

IT 25852-70-4P, Monobutyltin tris(isooctylthioglycolate)
67361-76-6P 70729-71-4P
(organotin stabilizer mixt.)

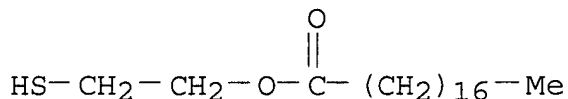
IT 59118-78-4, 2-Mercaptoethyl oleate
(organotin stabilizer mixt.)

L21 ANSWER 6 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1993:125812 Document No. 118:125812 Heat- and discoloration-resistant
chlorinated PVC compositions. Oomoto, Masanobu; Kawamoto, Kazuo;
Kakei, Hiroshi (Sekisui Chemical Co., Ltd., Japan; Tokuyama Soda
Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 04198348 A2 19920717 Heisei,
9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-327331
19901127.

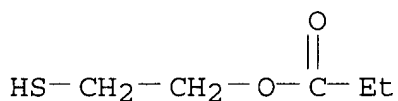
AB The title compns. comprise chlorinated PVC contg. 0.05-5 phr
alkyltin compds. and 0.05-5 phr S- and/or Cl-contg. alkyltin compds.
and/or metal halides. Thus, a molding prepd. by molding HA 15F

contg. MBS (Metablen C 150S) 10, Hiwax 4202E, dioctyltin sulfide 2, and monoctyltin(isooctylmercaptoacetate) chloride (I) 1 phr at 180.degree. for 7 min had yellowness 33, vs. 43 without I.

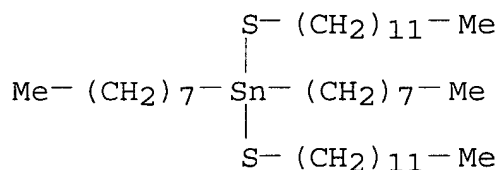
IT 27564-01-8, 2-Mercaptoethylstearate 70892-79-4
 (chlorinated PVC contg. alkyltin compds. and, heat-resistant)
 RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



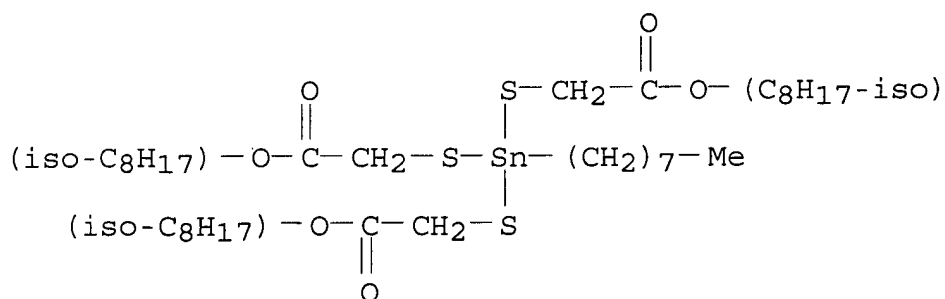
RN 70892-79-4 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-propanoate (9CI) (CA INDEX NAME)



IT 22205-30-7 26401-86-5, Monoctyltin
 tris(isooctylmercaptoacetate) 26401-97-8, Dioctyltin
 bis(isooctylmercaptoacetate) 53050-37-6
 145821-67-6 145821-68-7 145821-70-1
 145850-34-6
 (heat stabilizers, for chlorinated PVC)
 RN 22205-30-7 ZCAPLUS
 CN Stannane, bis(dodecylthio)dioctyl- (8CI, 9CI) (CA INDEX NAME)

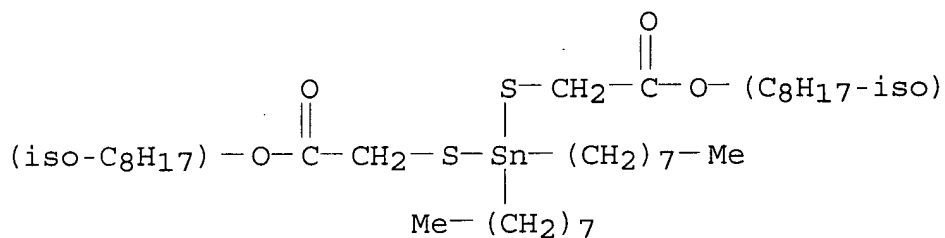


RN 26401-86-5 ZCAPLUS
 CN Acetic acid, 2,2',2''-[(octylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



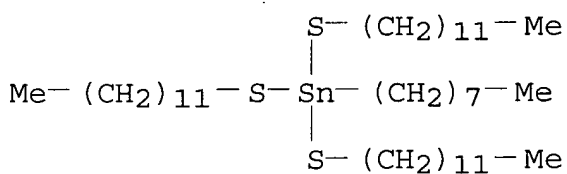
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



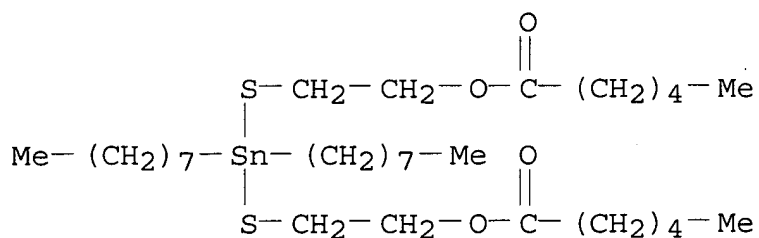
RN 53050-37-6 ZCAPLUS

CN Stannane, tris(dodecylthio)octyl- (9CI) (CA INDEX NAME)

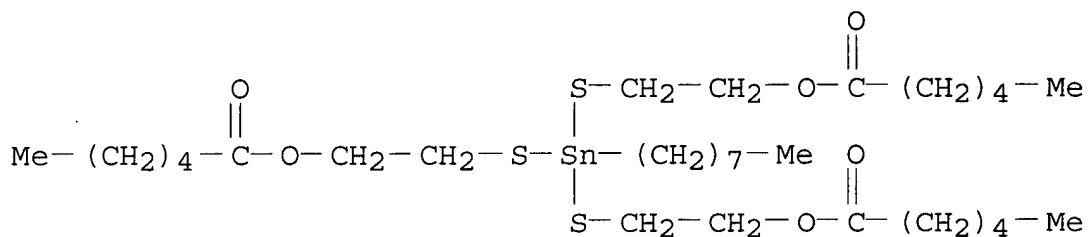


RN 145821-67-6 ZCAPLUS

CN Hexanoic acid, (dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 145821-68-7 ZCAPLUS

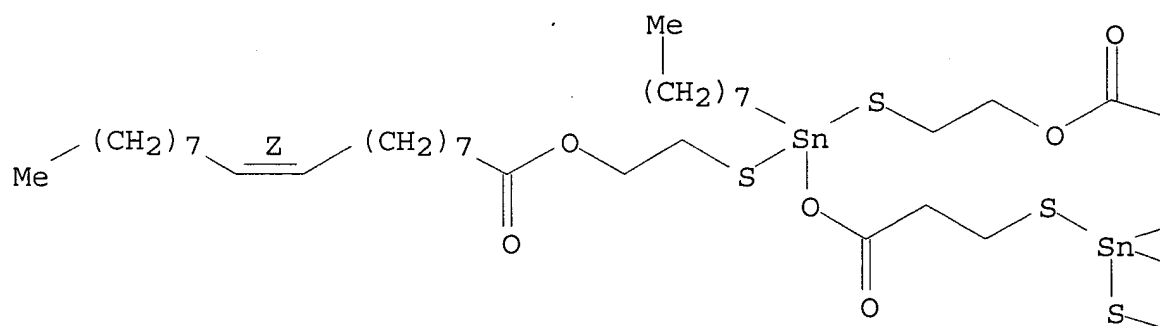
CN Hexanoic acid, (octylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

RN 145821-70-1 ZCAPLUS

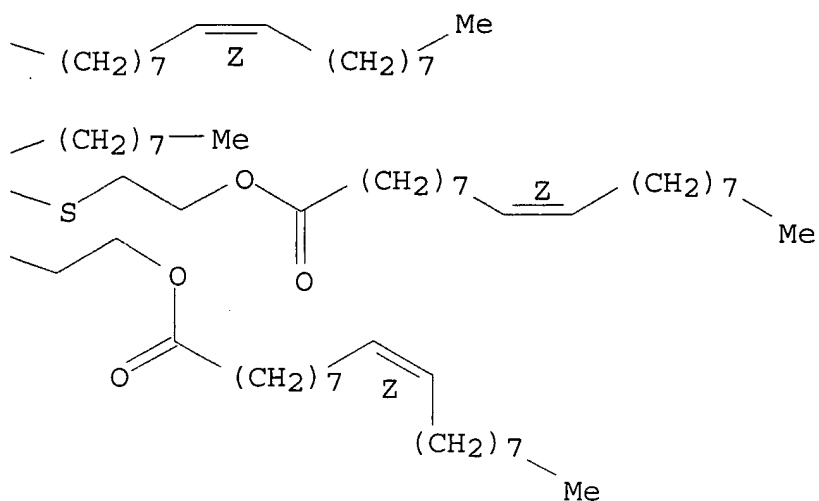
CN 9-Octadecenoic acid (9Z)-, 4,10-dioctyl-6-oxo-4,10-bis[[2-[[[(9Z)-1-oxo-9-octadecenyl]oxy]ethyl]thio]-5-oxa-3,9,11-trithia-4,10-distannatridecane-1,13-diyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

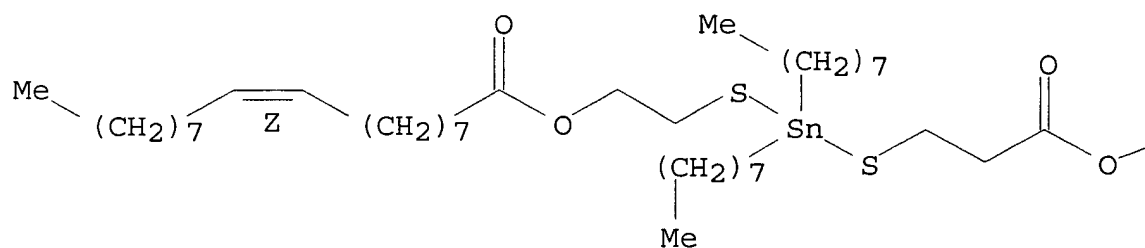


RN 145850-34-6 ZCAPLUS

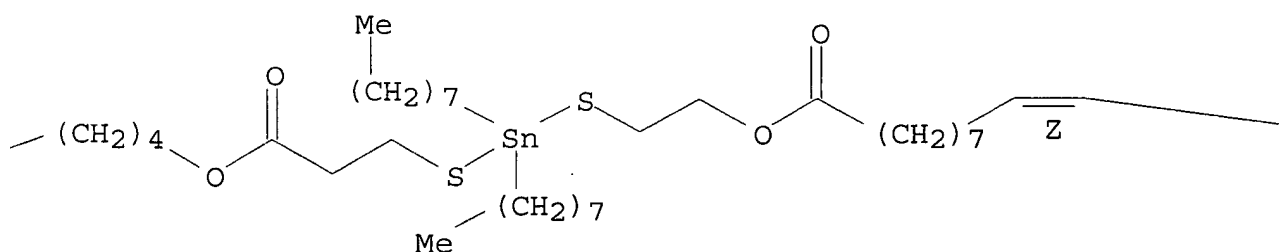
CN 9-Oxa-4,6-dithia-5-stannaheptacos-18-enoic acid,
 5,5-dioctyl-10-oxo-, 1,4-butanediyl ester, (Z,Z)- (9CI) (CA INDEX
 NAME)

Double bond geometry as shown.

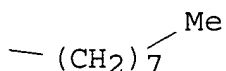
PAGE 1-A



PAGE 1-B



PAGE 1-C

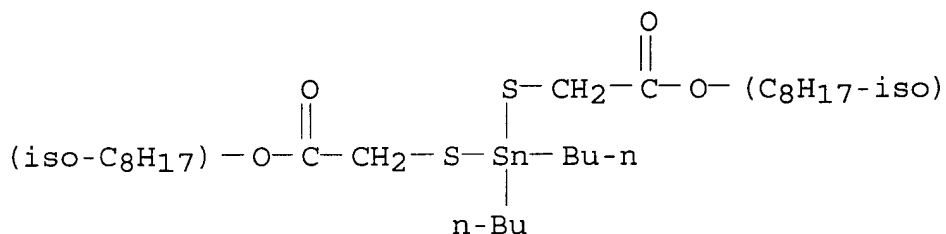


- IT 27564-01-8, 2-Mercaptoethylstearate 70892-79-4
(chlorinated PVC contg. alkyltin compds. and, heat-resistant)
- IT 22205-30-7 26401-86-5, Mono-octyltin
tris(isooctylmercaptoacetate) 26401-97-8, Dioctyltin
bis(isooctylmercaptoacetate) 53050-37-6
145821-67-6 145821-68-7 145821-70-1
145850-34-6
(heat stabilizers, for chlorinated PVC)
- L21 ANSWER 7 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1987:120858 Document No. 106:120858 Sulfur compound-organotin compound
mixtures as heat stabilizers for halogenated resins. Bohen, Joseph
M. (Pennwalt Corp., USA). Eur. Pat. Appl. EP 208044 A2 19870114,
22 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (English).
CODEN: EPXXDW. APPLICATION: EP 1986-100014 19860102. PRIORITY: US
1985-751392 19850703.
- AB Mixts. for the title use comprise (a) alkali or alk. earth metal
salts of mercaptans or mercapto acids, optionally .ltoreq.96%
replaced by overbased org. complexes of metal bases, and (b)
R1a(R2S)3-aSnSmSnR3b(SR4)3-b [R1-4 = (un)substituted alkyl or aryl,
a,b = 1 or 2, m = 1-10] or combinations of organotin sulfides and
.ltoreq.99.5% organotin mercaptides with CSnS groups. A mixt. of
PVC 100, 10:90 Et acrylate-Me acrylate copolymer processing aid 2.0,
acrylic impact modifier 7.0, wax 1.0, partially saponif. ester was
0.1, Ca stearate 1.5, TiO2 10.0, dimethyltin bis(2-mercaptoethyl
stearate) 0.45, methyltin tris(2-mercaptoethyl stearate) 0.20,
methyltin sesquisulfide 0.10, and Ba bis(2-mercaptoethyl stearate)
0.75 parts had Brabender-dynamic-heat-stability failure time 28 min.
- IT 25168-24-5, Dibutyltinbis(isooctylthioglycolate)
25852-70-4, Butyltintris(isooctylthioglycolate)
26401-86-5, Octyltintris(isooctylthioglycolate)
26401-97-8, Dioctyltinbis(isooctylthioglycolate)
26636-01-1, Dimethyltinbis(isooctylthioglycolate)
54849-38-6, Monomethyltintris(isooctylthioglycolate)
59118-76-2, Methyltintris(2-mercaptoethylstearate)
59118-79-5, Methyltintris(2-mercaptoethyloleate)
59138-44-2, Dimethyltinbis(2-mercaptoethylstearate)
67859-63-6, Dimethyltinbis(2-mercaptoethyloleate)
69128-10-5, Barium 2-mercaptoethyl stearate
85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5

, Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
2-mercaptoethyl stearate
(heat stabilizers, for halogenated resins)

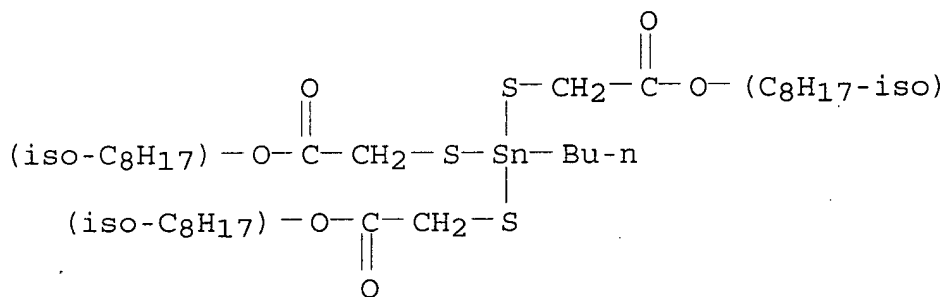
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl
ester (9CI) (CA INDEX NAME)



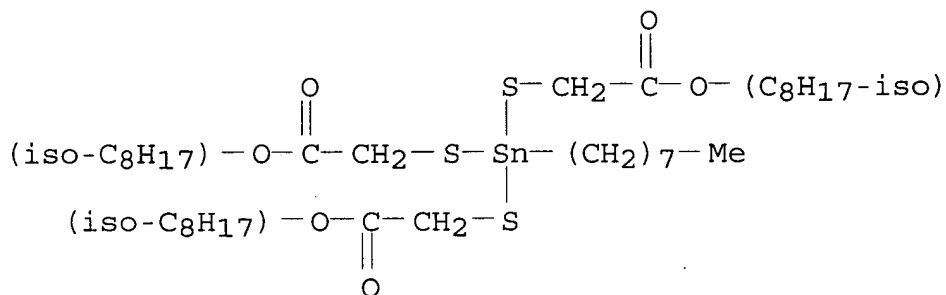
RN 25852-70-4 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-,
triisooctyl ester (9CI) (CA INDEX NAME)



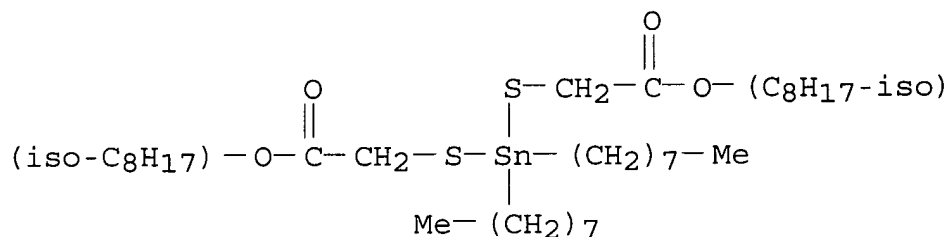
RN 26401-86-5 ZCAPLUS

CN Acetic acid, 2,2',2''-[(octylstannylidyne)tris(thio)]tris-,
triisooctyl ester (9CI) (CA INDEX NAME)



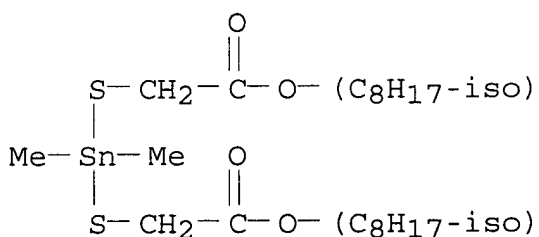
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



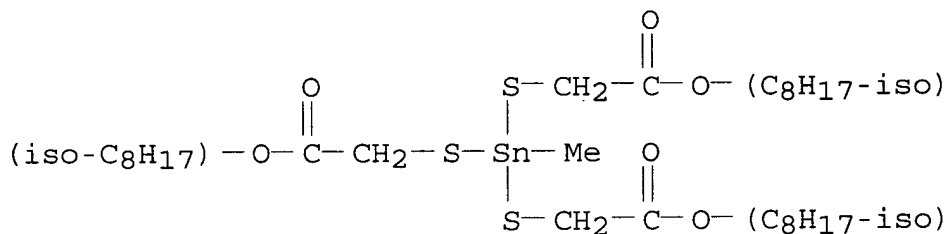
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



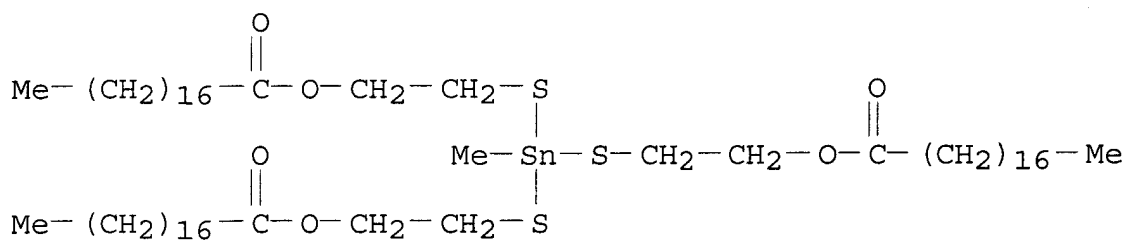
RN 54849-38-6 ZCAPLUS

CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-76-2 ZCAPLUS

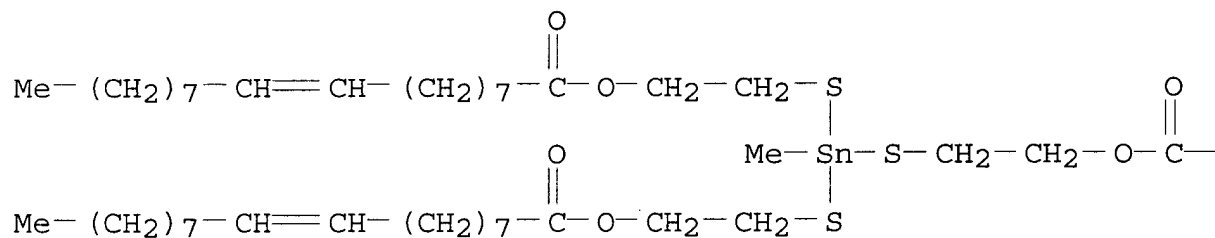
CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



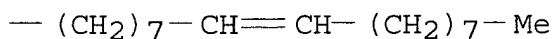
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

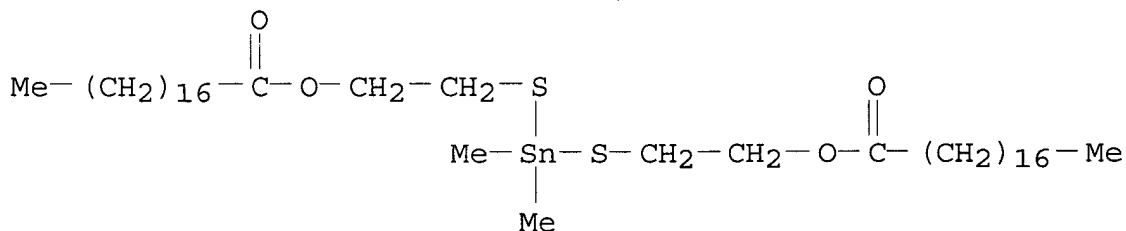


PAGE 1-B



RN 59138-44-2 ZCAPLUS

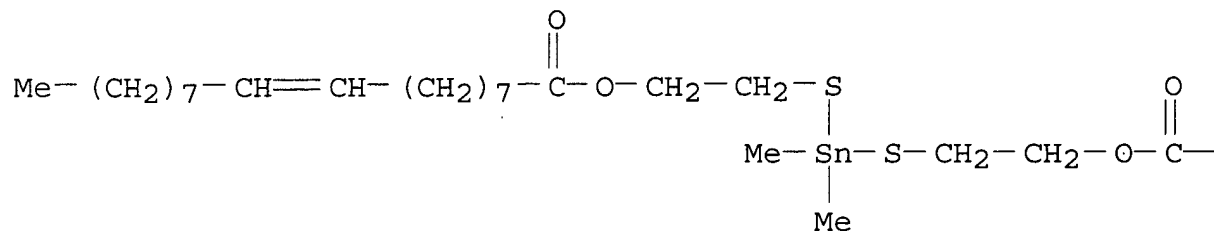
CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



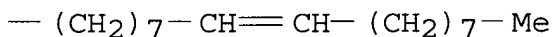
RN 67859-63-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

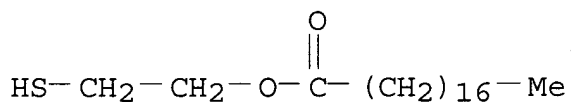


PAGE 1-B



RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

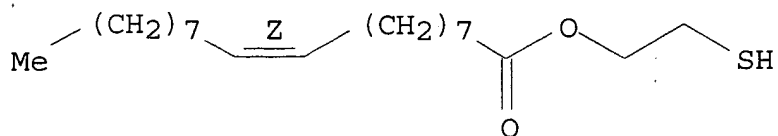


● 1/2 Ba

RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.

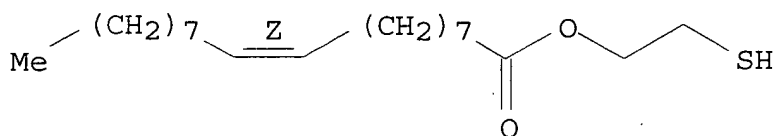


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

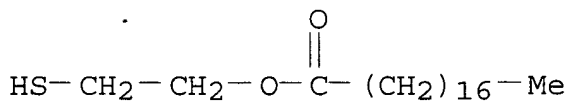
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

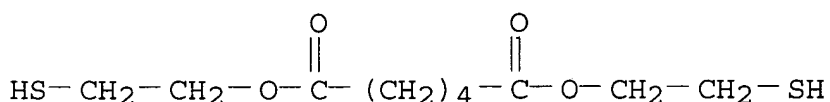
CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA
INDEX NAME)

● 1/2 Ca

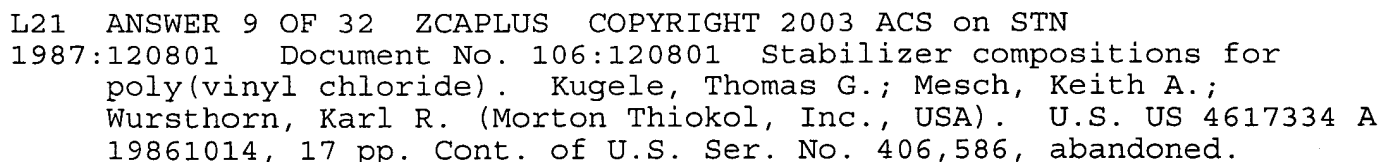
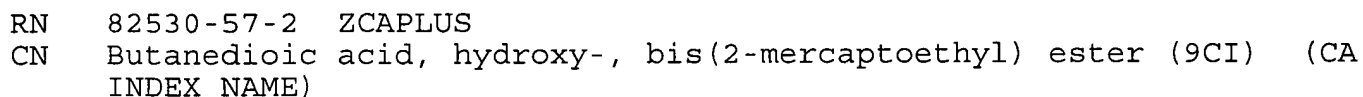
IT 25168-24-5, Dibutyltinbis(isooctylthioglycolate)
 25852-70-4, Butyltintris(isooctylthioglycolate)
 26401-86-5, Octyltintris(isooctylthioglycolate)
 26401-97-8, Dioctyltinbis(isooctylthioglycolate)
 26636-01-1, Dimethyltinbis(isooctylthioglycolate)
 54849-38-6, Monomethyltintris(isooctylthioglycolate)
 59118-76-2, Methyltintris(2-mercaptoethylstearate)
 59118-79-5, Methyltintris(2-mercaptoethyloleate)

59138-44-2, Dimethyltinbis(2-mercaptoethylstearate)
 67859-63-6, Dimethyltinbis(2-mercaptoethyloleate)
 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
 2-mercaptoethyl stearate
 (heat stabilizers, for halogenated resins)

L21 ANSWER 8 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1987:120817 Document No. 106:120817 Sterilization of objects made of
 halogeno-vinyllic polymers using ionizing radiation. Kornbaum,
 Simon; Chenard, Jean Yves (Atochem S. A., Fr.). U.S. US 4616046 A
 19861007, 8 pp. Cont.-in-part of U.S. Ser. No. 565,522, abandoned.
 (English). CODEN: USXXAM. APPLICATION: US 1984-607510 19840507.
 PRIORITY: FR 1980-21662 19801010; US 1981-309434 19811007; US
 1983-565522 19831228.
 AB Discoloration of PVC packaging materials by radiochem. sterilization
 can be prevented by adding heat stabilizers, e.g., org. Sn and Sb
 compds., and thiol esters contg. 1 SH group/3-10 C. Thus, PVC
 moldings contg. 0.9 phr poly(alkyl acrylate) (Paraloid K 120 N), 0.7
 phr styrene-alkyl acrylate copolymer (Paraloid K 175), 10 phr
 methacrylate-butadiene-styrene terpolymer (Kane ACE-B28A), 1.5 phr
 (C₈H₁₇)₂Sn(SCH₂CO₂C₈H₁₇-iso)₂, 3 phr Irgastab A 70, and 1.2 phr
 glyceryl monostearate was colorless after .gamma.-irradn. at
 0.46-2.76 Mrad, compared to yellow to red without mercaptan ester.
 IT 10194-00-0, Bis(2-mercaptoethyl) adipate 26401-97-8
 , Diisooctyl [(dioctylstannylene)dithio]diacetate 82530-57-2
 , Bis(2-mercaptoethyl) hydroxysuccinate 82530-58-3,
 Bis(4-mercapto butyl) succinate 82538-18-9, Bis(3-mercapto
 propyl) malonate
 (stabilizers, for PVC in radiochem. sterilization)
 RN 10194-00-0 ZCAPLUS
 CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

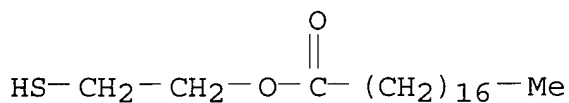


RN 26401-97-8 ZCAPLUS
 CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl
 ester (9CI) (CA INDEX NAME)

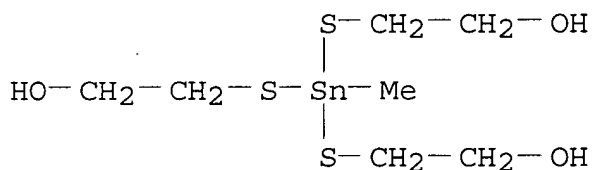


(English). CODEN: USXXAM. APPLICATION: US 1984-654580 19840924.
PRIORITY: US 1982-406586 19820809.

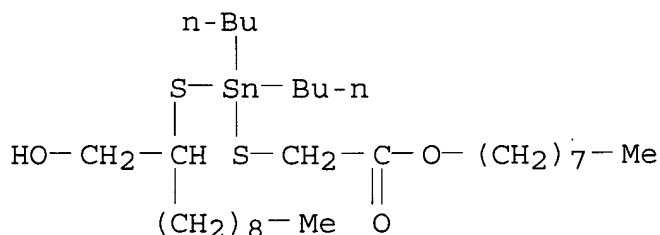
- AB A compn. used to stabilize halogen-contg. polymers against heat
degrdn. contains org. Sb compds., having .gtoreq.1 SbSC linkage,
mercaptan-contg. org. compds., and metal mercapto alcs. having
.gtoreq.1 nonbenzylic Sb or Sn atom bonded to S. The stabilized
polymers are useful in the manuf. of pipes. A PVC (Geon 103
EP-F-76) compn. contg. Sb(SCH₂CO₂C₈H₁₇)₃ 0.3, HSCH₂CH₂O₂CC₁₇H₃₃ 0.1,
and Sn(SCH₂CH₂OH)₄ 0.05 phr was masticated at 193.degree., and
exhibited no obvious color change, up to 5 min.
- IT 27564-01-8, 2-Mercaptoethyl stearate 85758-50-5
103956-48-5 104033-28-5
(heat stabilizers contg., for PVC)
- RN 27564-01-8 ZCAPLUS
- CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



- RN 85758-50-5 ZCAPLUS
- CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris- (9CI) (CA
INDEX NAME)

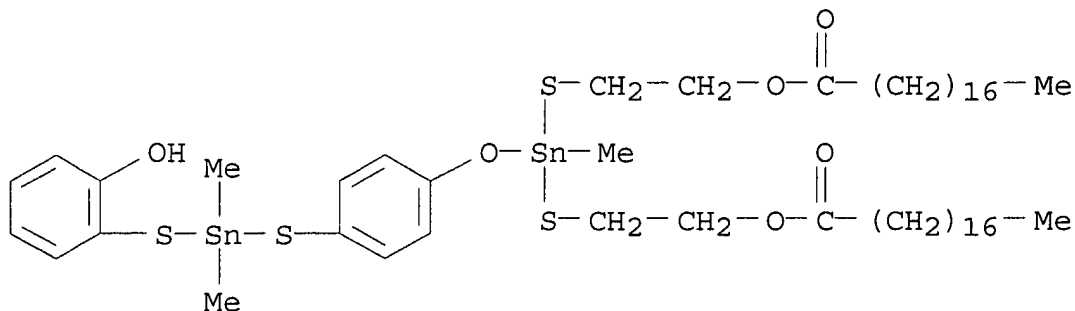


- RN 103956-48-5 ZCAPLUS
- CN Acetic acid, [[dibutyl[[1-(hydroxymethyl)decyl]thio]stannyl]thio]-,
octyl ester (9CI) (CA INDEX NAME)



- RN 104033-28-5 ZCAPLUS
- CN Octadecanoic acid, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]
]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA

INDEX NAME)



IT 27564-01-8, 2-Mercaptoethyl stearate 85758-50-5
 103956-48-5 104033-28-5
 (heat stabilizers contg., for PVC)

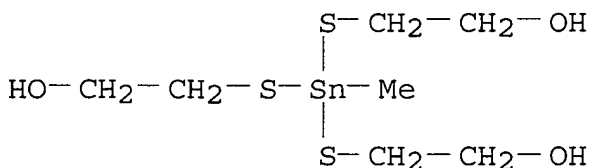
L21 ANSWER 10 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1986:498600 Document No. 105:98600 Stabilizers for polymers. Kugele,
 Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA).
 Can. CA 1202170 A1 19860325, 70 pp. (English). CODEN: CAXXA4.
 APPLICATION: CA 1983-435649 19830830.

AB Heat stabilizers for halogenated polymers comprise synergic mixts.
 of Sb mercaptides; thiols; and hydroxylated Sn or Sb mercaptides.
 Thus, compounded PVC contg. Sb(SCH2CO2C8H17)3 0.3, HS(CH2)2O2CC17H33
 (I) 0.1, and Sn[S(CH2)2OH]4 (II) 0.05 phr had color rating 10 (10
 white, 0 burnt) after milling 5 min at .apprx.193.degree., compared
 with 8 without II or III.

IT 85758-50-5 103956-48-5 104033-27-4
 104033-29-6
 (heat stabilizers, for PVC)

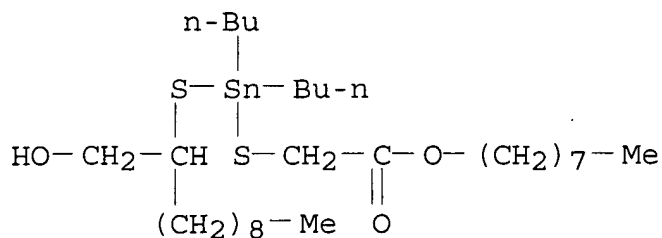
RN 85758-50-5 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris- (9CI) (CA
 INDEX NAME)



RN 103956-48-5 ZCAPLUS

CN Acetic acid, [[dibutyl[[1-(hydroxymethyl)decyl]thio]stannyl]thio]-,
 octyl ester (9CI) (CA INDEX NAME)



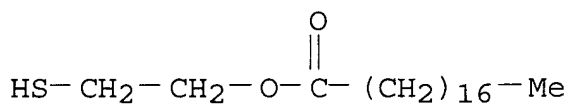
RN 104033-27-4 ZCAPLUS

CN Octadecenoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 27564-01-8

CMF C20 H40 O2 S



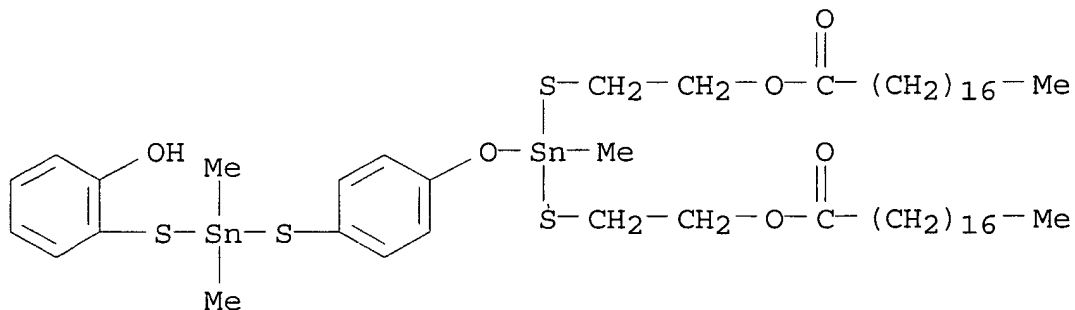
RN 104033-29-6 ZCAPLUS

CN Octadecenoic acid, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

CM 1

CRN 104033-28-5

CMF C55 H96 O6 S4 Sn2



IT 85758-50-5 103956-48-5 104033-27-4

104033-29-6

(heat stabilizers, for PVC)

L21 ANSWER 11 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1986:225735 Document No. 104:225735 An evaluation of the effects of antimony and tin stabilizer on the fusion characteristics of PVC dryblends. Clark, Dane L.; Hollo, Brenda J.; Tornstrom, Paul K.; Turnbull, Robert E.; Woodley, Tom R. (Synth. Prod. Co., Cleveland, OH, 44110, USA). Journal of Vinyl Technology, 8(1), 27-31 (English) 1986. CODEN: JVTEDI. ISSN: 0193-7197.

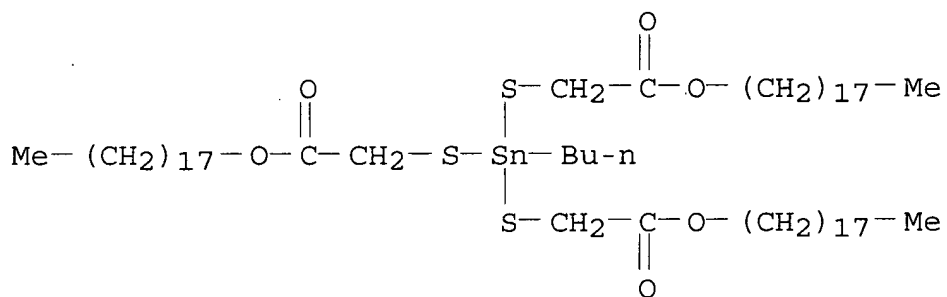
AB The Sn stabilizers did not promote fusion of PVC [9002-86-2] dry blend. Sn stabilizers with shorter chain esters (C <10) had no effect on compd. fusion and those contg. longer chain esters retarded fusion. Sb stabilizers promoted fusion in the single screw compd.; Sb stabilizers with short chain esters promoted fusion more strongly than those contg. long chain esters. Fusion times were not strongly affected by ester type. Sn and Sb stabilizers plasticized PVC to approx. the same extent, and DOP [117-81-7] plasticized PVC much more strongly.

IT 57414-19-4 59118-80-8 62084-14-4
66899-73-8 68928-34-7 72259-65-5
83943-32-2 85508-79-8 102525-91-7
102565-70-8 102565-71-9 102578-19-8

(stabilizers, for PVC, fusion in relation to)

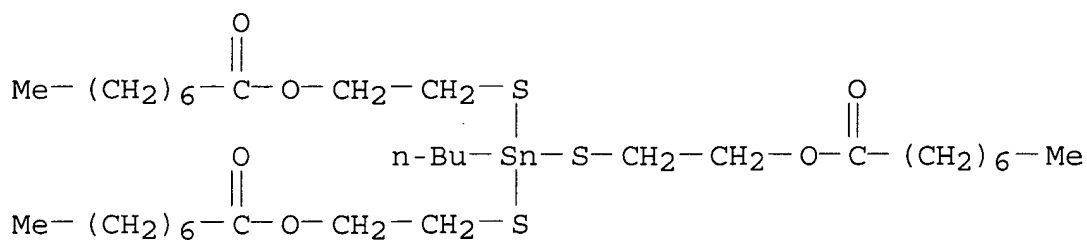
RN 57414-19-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexacosanoic acid, 4-butyl-4-[[2-(octadecyloxy)-2-oxoethyl]thio]-7-oxo-, octadecyl ester (9CI) (CA INDEX NAME)



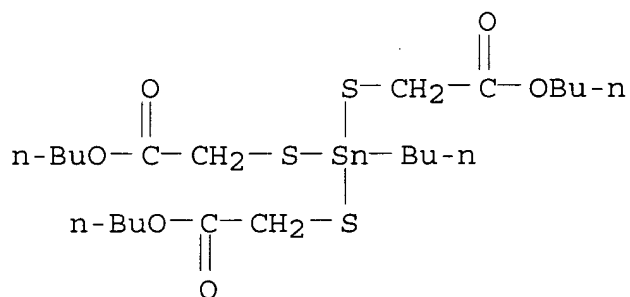
RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



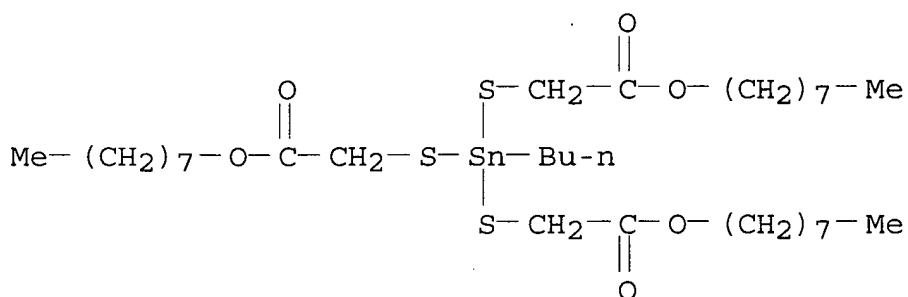
RN 62084-14-4 ZCAPLUS

CN	8-Oxa-3,5-dithia-4-stannadodecanoic acid, 4-[(2-butoxy-2-oxoethyl)thio]-4-butyl-7-oxo-, butyl ester (9CI) (CA INDEX NAME)
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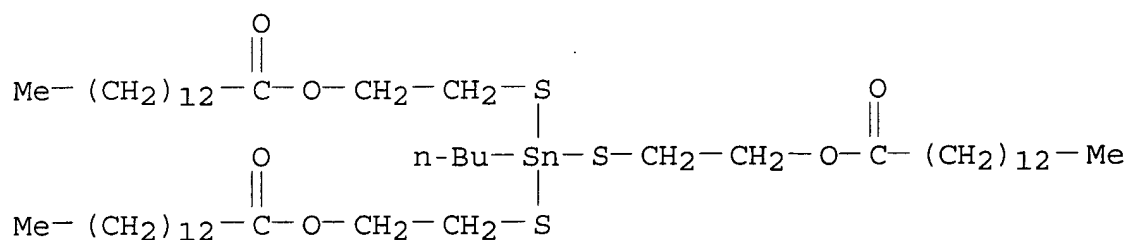
RN 66899-73-8 ZCAPLUS

CN	8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4-butyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI)	(CA INDEX NAME)
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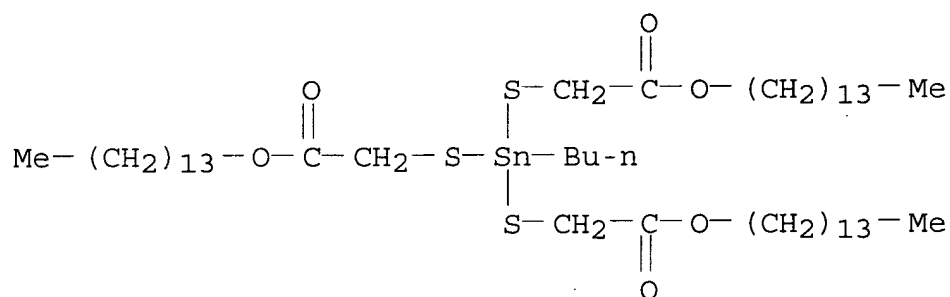
RN 68928-34-7 ZCAPLUS

CN Tetradecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



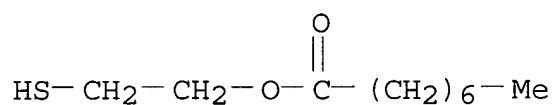
RN 72259-65-5 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-,
tritetradecyl ester (9CI) (CA INDEX NAME)



RN 83943-32-2 ZCAPLUS

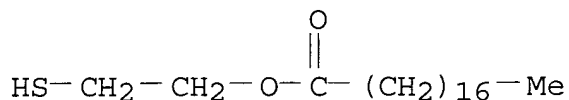
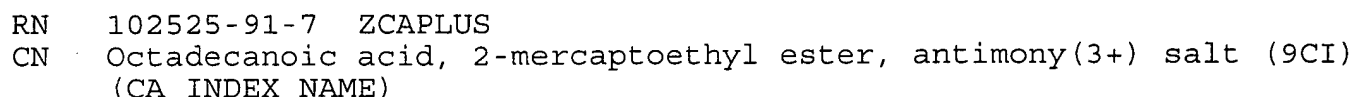
CN Oxyanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI) (CA
 INDEX NAME)



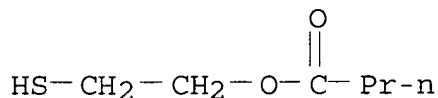
● 1/3 Sb (III)

RN 85508-79-8 ZCAPLUS

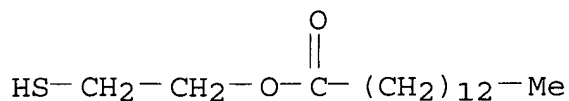
Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



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RN      102565-70-8      ZCAPLUS
CN      Butanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI)  (CA
INDEX NAME)
```



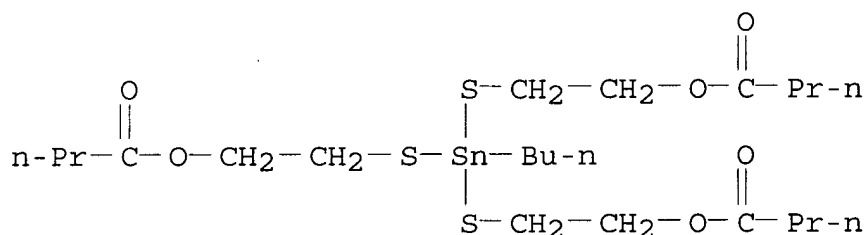
```
RN      102565-71-9   ZCAPLUS
CN      Tetradecanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI)
        (CA INDEX NAME)
```



● 1/3 Sb(III)

RN 102578-19-8 ZCAPLUS

CN Butanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



IT 57414-19-4 59118-80-8 62084-14-4
66899-73-8 68928-34-7 72259-65-5
83943-32-2 85508-79-8 102525-91-7
102565-70-8 102565-71-9 102578-19-8
(stabilizers, for PVC, fusion in relation to)

L21 ANSWER 12 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1985:454810 Document No. 103:54810 Characterization of organotin
stabilizers and related structure compounds by gel permeation
chromatography. Jirackova-Audouin, L.; Ranceze, D.; Verdu, J. (Dep.
Mater., ENSAM, Paris, 75013, Fr.). Analisis, 13(2), 59-64 (French)
1985. CODEN: ANLSCY. ISSN: 0365-4877.

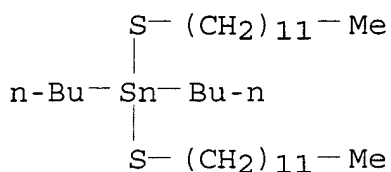
AB Gel-permeation chromatog. with refractometric and UV absorptiometric
detection was useful in characterization of 26 organotin derivs.,
useful as heat stabilizers for PVC [9002-86-2]. The behavior of
these derivs. were compared to those of org. compds. contg. the same
functional groups except Sn. The structure-retention time relations
were discussed.

IT 1185-81-5 15666-28-1 20004-12-0
25168-24-5 25852-70-4 26401-97-8
28570-24-3 51287-83-3 82530-60-7
85508-79-8

(gel-permeation chromatog. of, for heat stabilizers, for PVC)

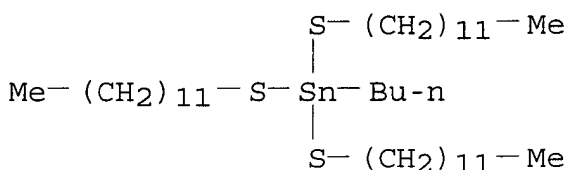
RN 1185-81-5 ZCAPLUS

CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



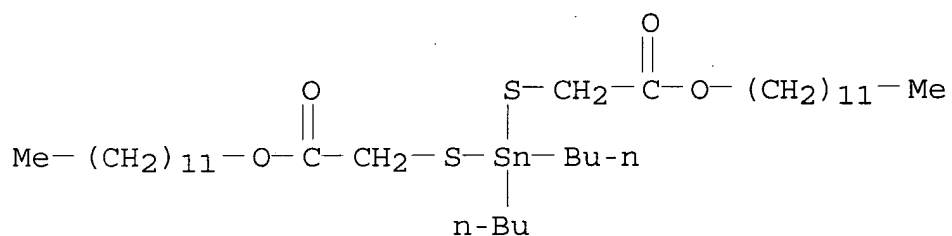
RN 15666-28-1 ZCAPLUS

CN Stannane, butyltris(dodecylthio) - (8CI, 9CI) (CA INDEX NAME)



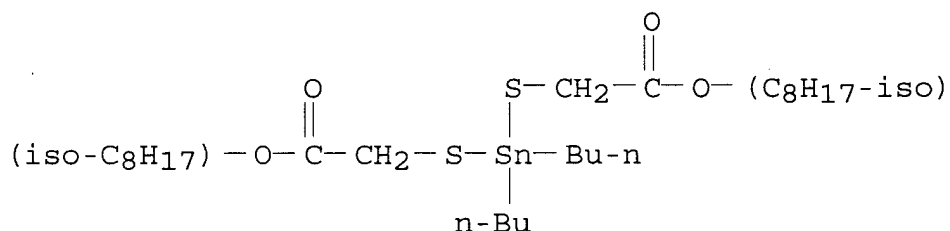
RN 20004-12-0 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannaeicosanoic acid, 4,4-dibutyl-7-oxo-, dodecyl ester (9CI) (CA INDEX NAME)



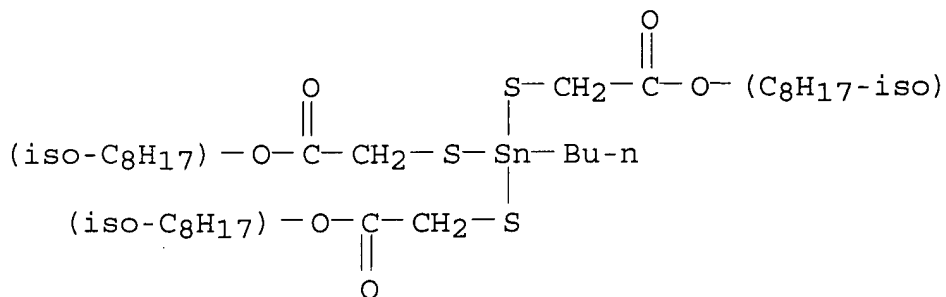
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



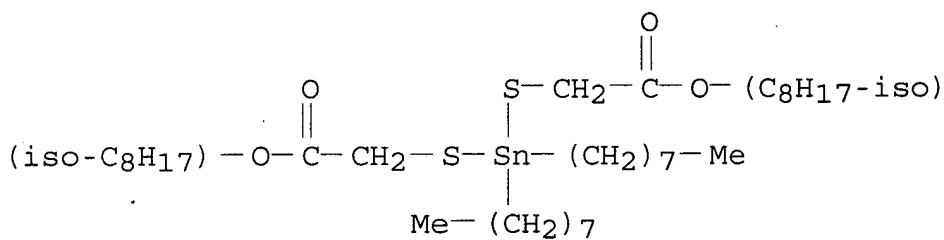
RN 25852-70-4 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



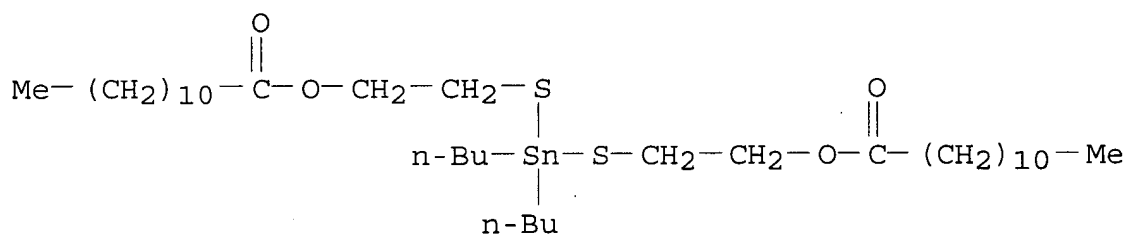
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



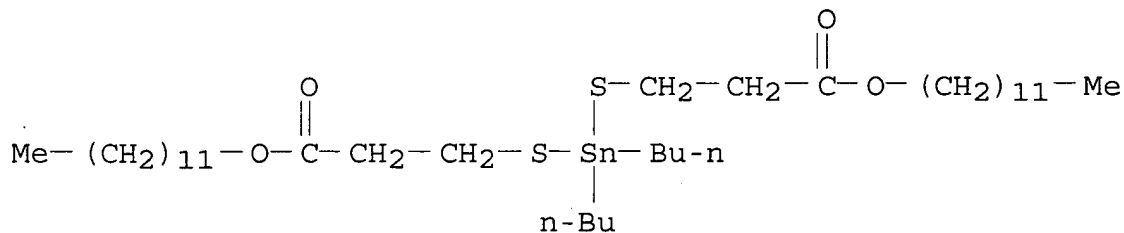
RN 28570-24-3 ZCAPLUS

CN Dodecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



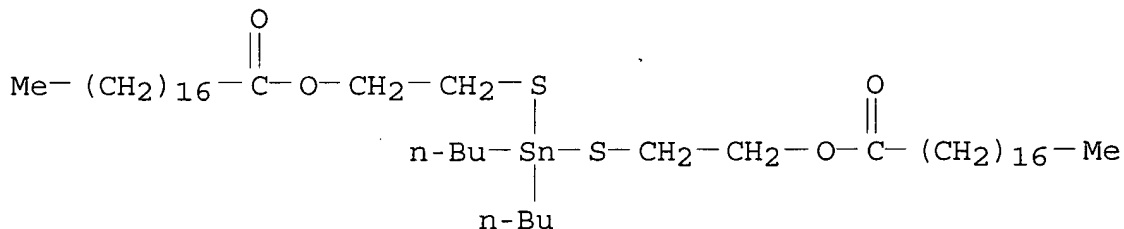
RN 51287-83-3 ZCAPLUS

CN 10-Oxa-4,6-dithia-5-stannadocosanoic acid, 5,5-dibutyl-9-oxo-, dodecyl ester (9CI) (CA INDEX NAME)



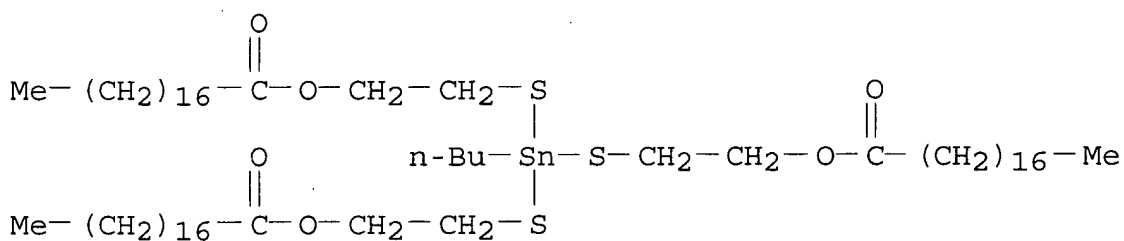
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-79-8 ZCAPLUS

CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

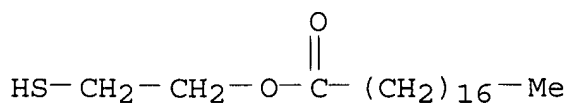


IT 27564-01-8 60642-66-2

(gel-permeation chromatog. of, in characterization of organotin compds. contg. thio-ester groups, for heat stabilizers, for PVC)

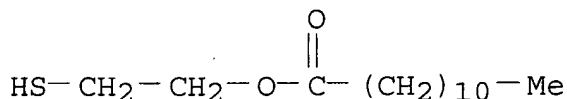
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 60642-66-2 ZCAPLUS

CN Dodecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 1185-81-5 15666-28-1 20004-12-0
 25168-24-5 25852-70-4 26401-97-8
 28570-24-3 51287-83-3 82530-60-7
 85508-79-8

(gel-permeation chromatog. of, for heat stabilizers, for PVC)

IT 27564-01-8 60642-66-2

(gel-permeation chromatog. of, in characterization of organotin compds. contg. thio-ester groups, for heat stabilizers, for PVC)

L21 ANSWER 13 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1985:96513 Document No. 102:96513 Heat stabilizers for halogenated resins. Bohen, Joseph Michael; Reifenberg, Gerald Harvey (Pennwalt Corp., USA). Eur. Pat. Appl. EP 124833 A1 19841114, 24 pp.

DESIGNATED STATES: R: BE, DE, FR, GB, NL. (English). CODEN:

EPXXDW. APPLICATION: EP 1984-104741 19840427. PRIORITY: US

1983-489881 19830429.

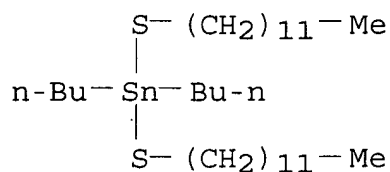
AB Halogen-free heat stabilizer compns. for halogenated resins comprise (A) an aliph. mercaptan and (B) .gtoreq.1 S-contg. organotin compd., whereby .ltoreq.80% of the mercaptan can be replaced by an alkali or alk. earth metal salt of a mercaptan or mercapto acid and the A-B wt. ratio is (1-25):(1-20). Thus, PVC [9002-86-2] 100, paraffin wax 1.2, oxidized polyethylene wax 0.15, Ca stearate 0.6, CaCO3 2.0, TiO2 1.0, and 15:85 methyltin sesquisulfide + 2-mercaptoethyl stearate [27564-01-8] stabilizer 0.5 parts were mixed in a blender, masticated at 370.degree.F and rated visually for discoloration. A resin compn. contg. a binary stabilizer remained white after 15 min of processing, whereas a compn. contg. only 1 of the stabilizers was discolored after 3-12 min..

IT 1185-81-5 22909-87-1 25168-24-5
 25852-70-4 26401-97-8 26636-01-1
 26761-46-6 27564-01-8 29946-28-9
 30982-97-9 54849-38-6 59118-76-2
 59118-93-3 59138-44-2 68298-40-8
 69128-10-5 95115-32-5 95115-38-1

(heat stabilizers, for halogenated resins)

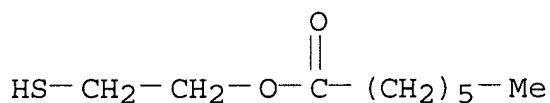
RN 1185-81-5 ZCAPLUS

CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



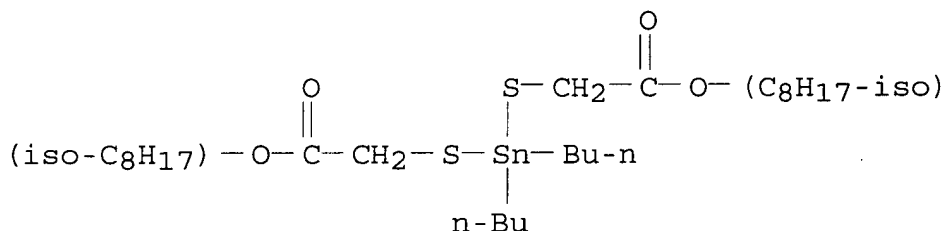
RN 22909-87-1 ZCAPLUS

CN Heptanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



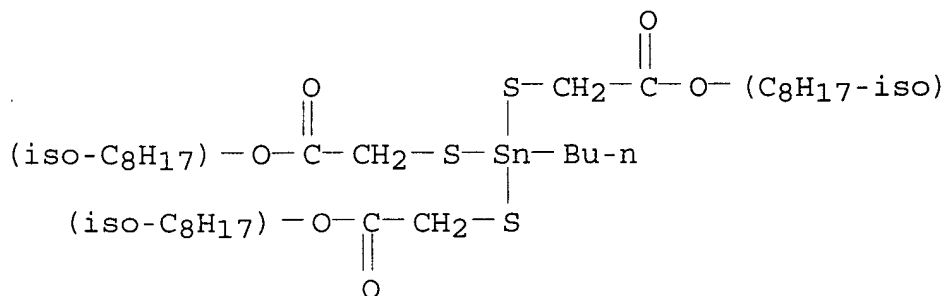
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



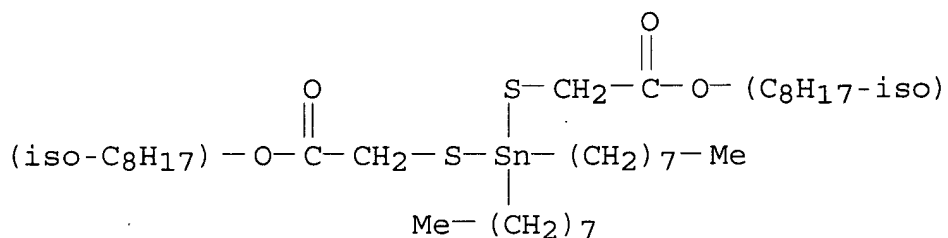
RN 25852-70-4 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



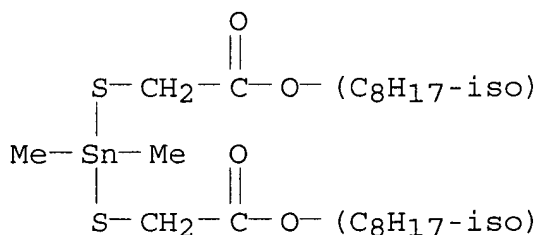
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



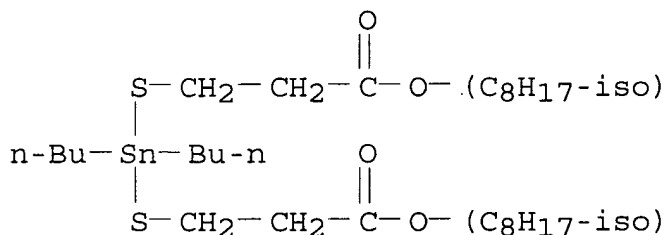
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



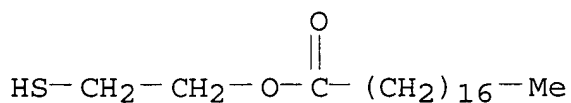
RN 26761-46-6 ZCAPLUS

CN Propanoic acid, 3,3'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



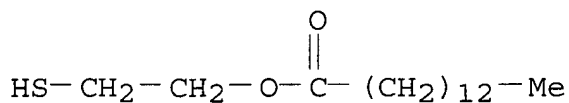
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



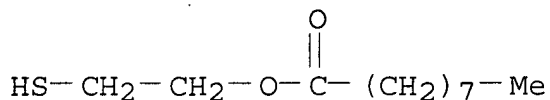
RN 29946-28-9 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



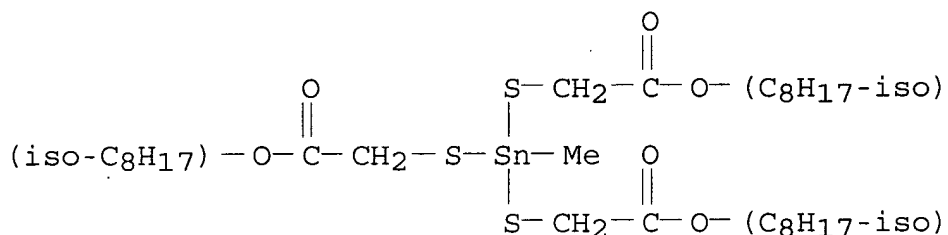
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



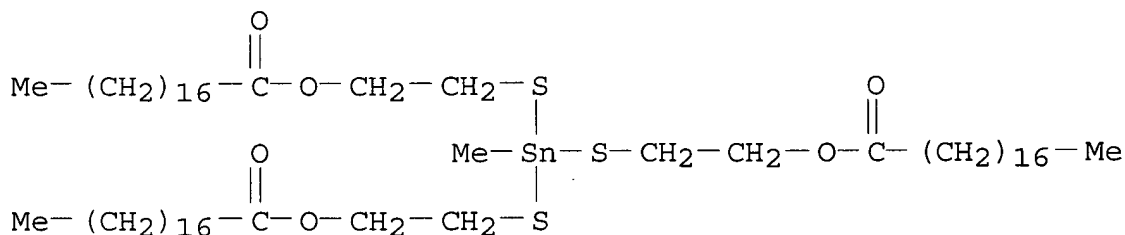
RN 54849-38-6 ZCAPLUS

CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



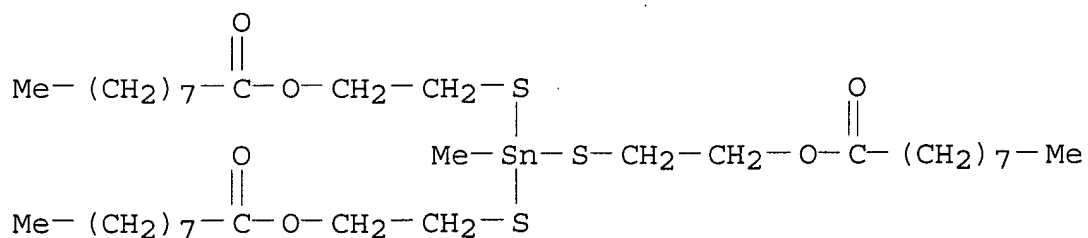
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



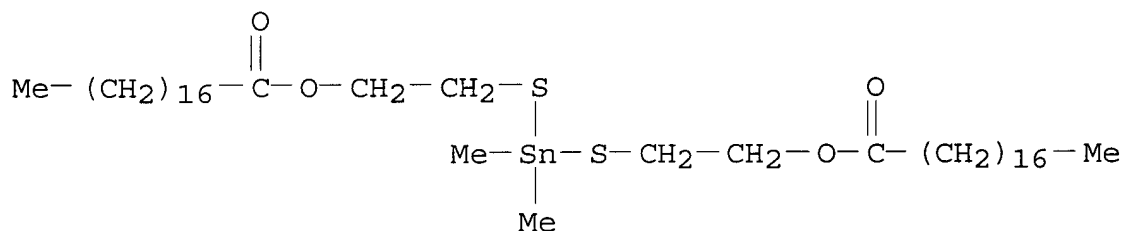
RN 59118-93-3 ZCAPLUS

CN Nonanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



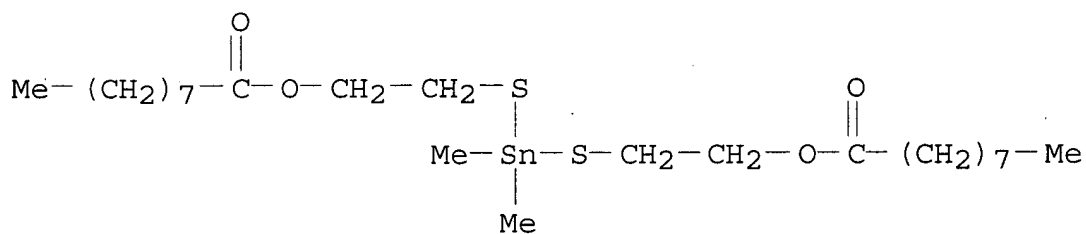
RN 59138-44-2 ZCAPLUS

Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



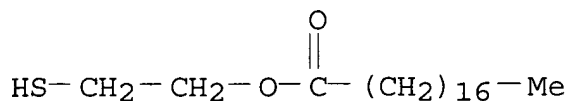
RN 68298-40-8 ZCAPLUS

CN Nonanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



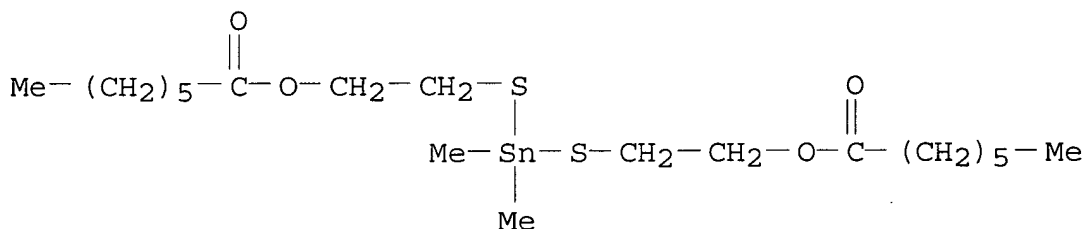
RN 69128-10-5 ZCAPLUS

CN	Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI)	(CA
	INDEX NAME)	

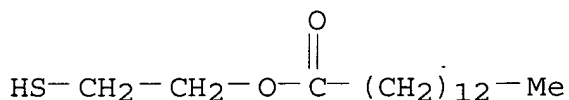


● 1/2 Ba

RN 95115-32-5 ZCAPLUS
 CN Heptanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



RN 95115-38-1 ZCAPLUS
 CN Tetradecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 1185-81-5 22909-87-1 25168-24-5
 25852-70-4 26401-97-8 26636-01-1
 26761-46-6 27564-01-8 29946-28-9
 30982-97-9 54849-38-6 59118-76-2
 59118-93-3 59138-44-2 68298-40-8
 69128-10-5 95115-32-5 95115-38-1
 (heat stabilizers, for halogenated resins)

L21 ANSWER 14 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:406529 Document No. 99:6529 Stabilizer composition. Bohn, Joseph
 Michael (Pennwalt Corp., USA). Braz. Pedido PI BR 8102789 A
 19821214, 40 pp. (Portuguese). CODEN: BPXXDX. APPLICATION: BR

1981-2789 19810506.

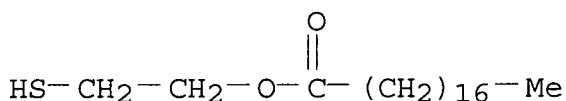
AB A heat stabilizer compn. for PVC [9002-86-2] comprises 1-80% of a Sn tetramercaptide and 20-99% of a S-contg. organotin compd. and may also contain 1-60% alkali metal or alk. earth metal mercaptide and/or 1-60% overbased org. complex. Thus, reaction of 0.4 mol isooctyl mercaptoacetate [25103-09-7] with 0.1 mol SnCl₄ in hexane contg. 0.4 mol Et₃N gave 87% Sn(SCH₂CO₂R)₄ (R = isooctyl) (I) [62568-17-6]. A compounded PVC resin contg. 1.20 phr dimethyltin bis(isooctyl mercaptoacetate) [26636-01-1] and 0.30 phr I remained white for .gtoreq.12 min in a Brabender Plastograph at 213.degree., whereas a similar PVC compn. without the 2 stabilizers turned pink in 3 min and grey in 6 min.

IT 80233-79-0

(heat stabilizers, for PVC)

RN 80233-79-0 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



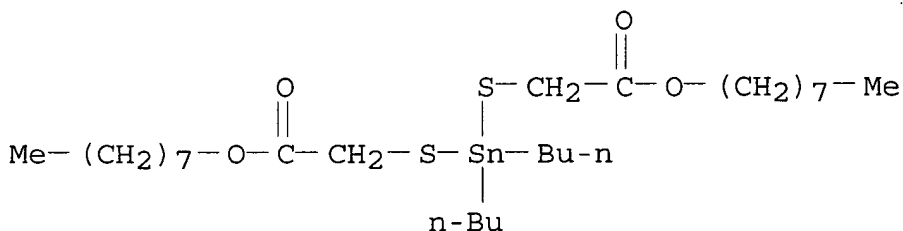
● 1/4 Sn(IV)

IT 2781-09-1 22094-92-4 26636-01-1
 59118-76-2 59118-79-5 59138-44-2
 65291-38-5 65301-46-4 66899-73-8
 67361-76-6 67361-77-7 67859-63-6
 69128-10-5 82530-60-7 84435-07-4
 85508-79-8 85508-82-3 85508-84-5
 85508-85-6

(heat stabilizers, with tin tetramercaptides, for PVC)

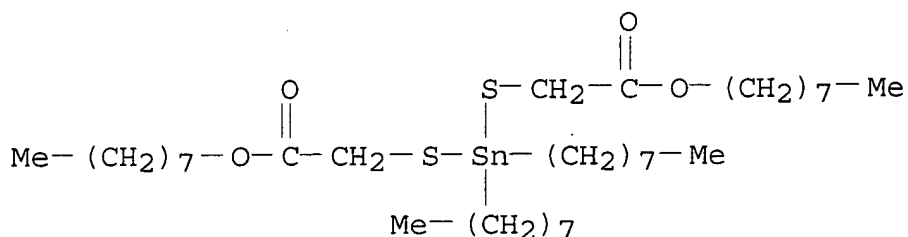
RN 2781-09-1 ZCAPLUS.

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dibutyl-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



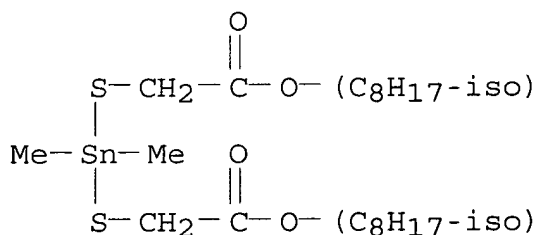
RN 22094-92-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4,4-dioctyl-7-oxo-,
octyl ester (9CI) (CA INDEX NAME)



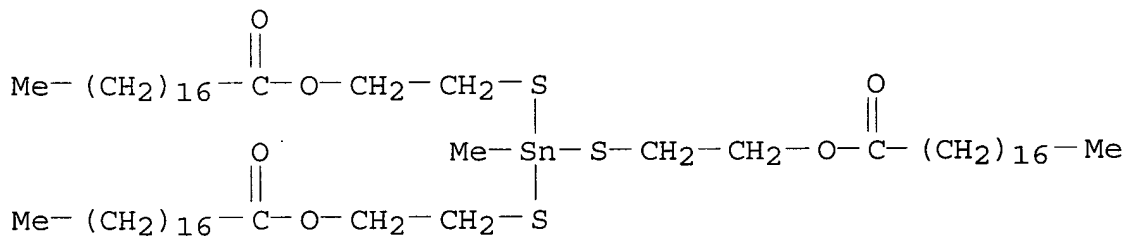
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl
ester (9CI) (CA INDEX NAME)



RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

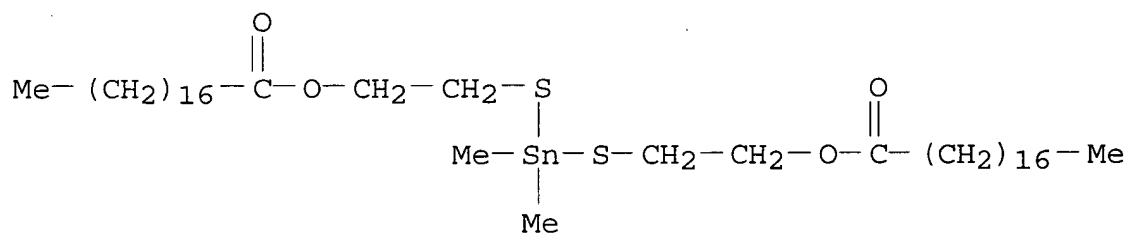


RN 59118-79-5 ZCAPLUS

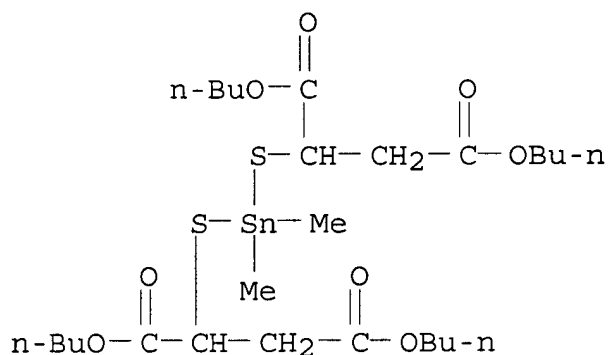
CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-
ethanediyl) ester (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\ \hspace{15em} | \\ \hspace{15em} \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}- \\ \text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array}$$
$$-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{Me}$$

CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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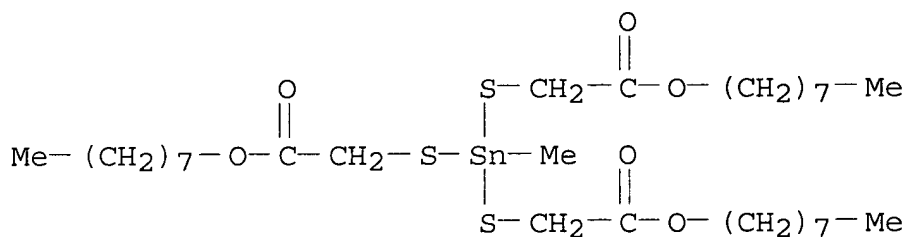


CN	Butanedioic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, tetrabutyl ester (9CI) (CA INDEX NAME)
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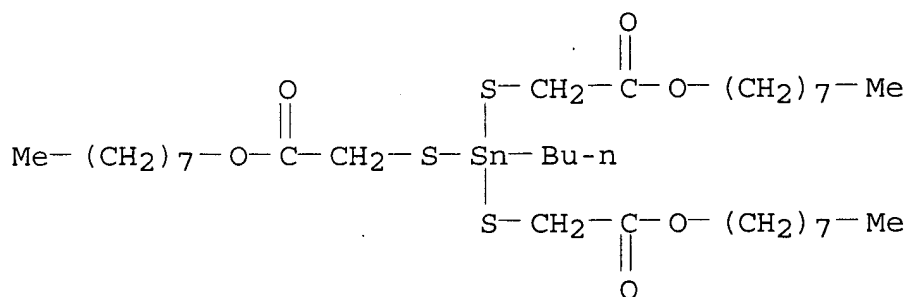
RN 65301-46-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4-methyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 66899-73-8 ZCAPLUS

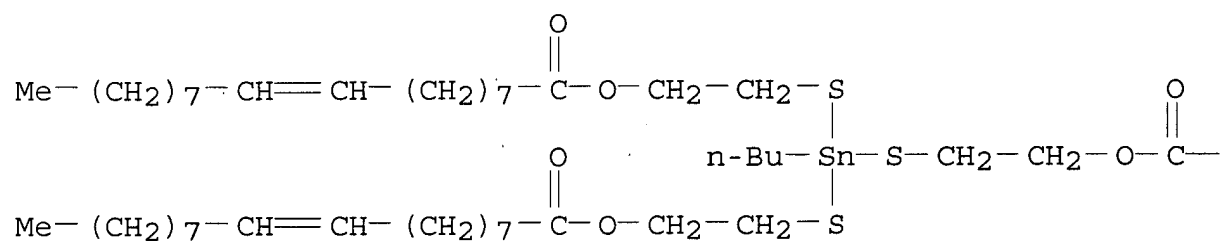
CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4-butyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



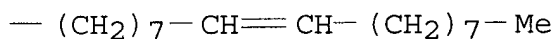
RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

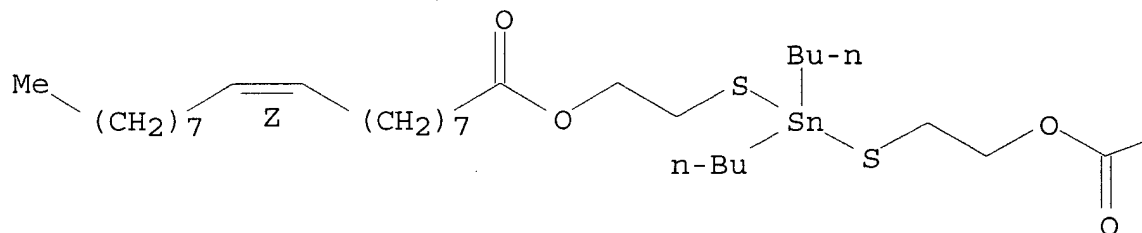


RN 67361-77-7 ZCAPLUS

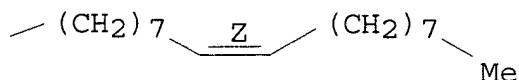
9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



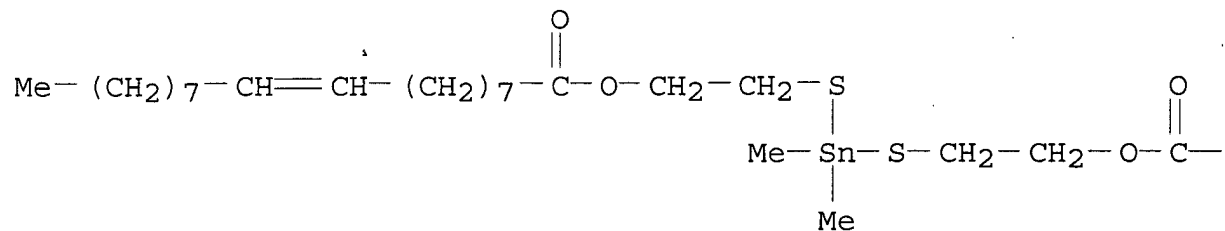
PAGE 1-B



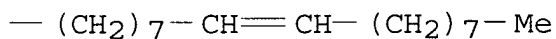
RN 67859-63-6 ZCAPLUS

9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

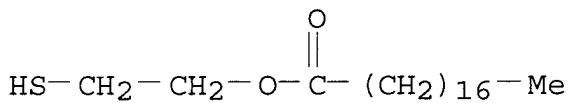


PAGE 1-B



RN 69128-10-5 ZCAPLUS

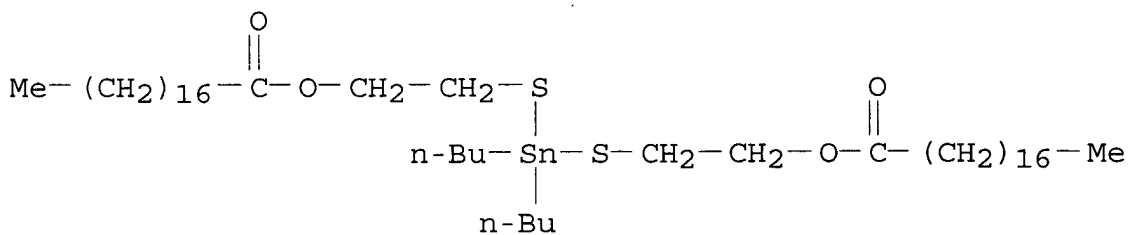
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

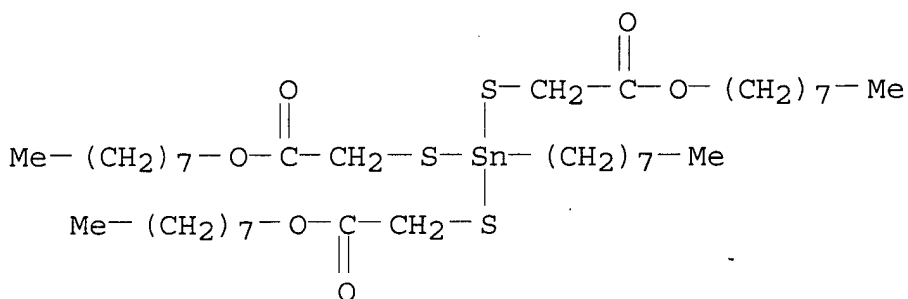
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



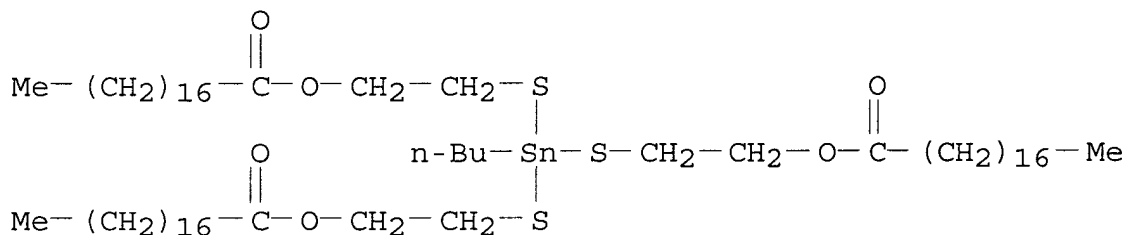
RN 84435-07-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-octyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 85508-79-8 ZCAPLUS

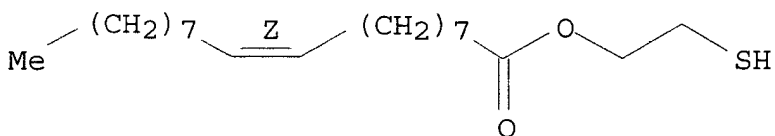
CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.

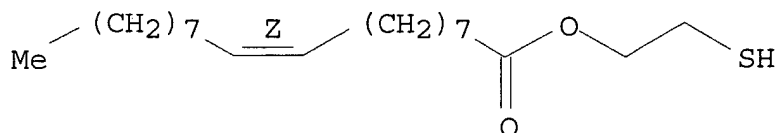


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

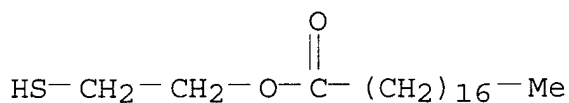
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.



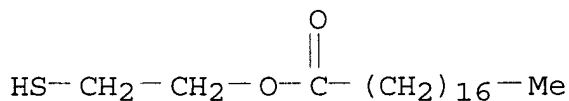
● 1/2 Ca

RN 85508-85-6 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)



● 1/2 Ca

IT 27564-01-8
 (reaction of, with stannic chloride)
 RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



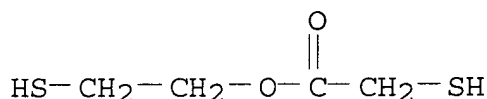
IT 80233-79-0
 (heat stabilizers, for PVC)
 IT 2781-09-1 22094-92-4 26636-01-1
 59118-76-2 59118-79-5 59138-44-2
 65291-38-5 65301-46-4 66899-73-8
 67361-76-6 67361-77-7 67859-63-6
 69128-10-5 82530-60-7 84435-07-4
 85508-79-8 85508-82-3 85508-84-5
 85508-85-6
 (heat stabilizers, with tin tetramercaptides, for PVC)
 IT 27564-01-8
 (reaction of, with stannic chloride)

L21 ANSWER 15 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:199211 Document No. 98:199211 Stabilizer compositions for
 polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958
 A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
 JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US
 1982-345828 19820204.

AB Hydroxythiotin compds., SH-contg. org. compds., and optionally
 organotin compds. are used as heat stabilizers for halogen-contg.
 polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100,
 Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6,
 AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CCl₇H₃₃)₂ [
 85758-68-5] 0.02, HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and
 MeSn(:S)SCH₂CH₂O₂CCl₇H₃₃ [83890-15-7] 0.40 part was rolled at
 .apprx.193.degree., and the color changed from white to tan-orange
 after 8.5 min.

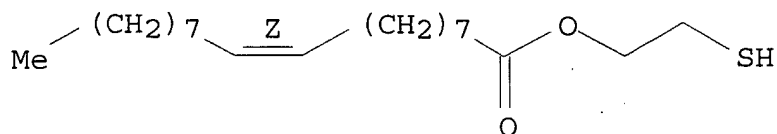
IT 38705-47-4 59118-78-4 59118-80-8
 59138-44-2 83890-20-4 85758-44-7
 85758-45-8 85758-50-5 85758-54-9
 85758-56-1 85758-57-2 85758-61-8
 85758-64-1 85758-65-2 85758-67-4
 85758-68-5
 (heat stabilizers contg., for PVC)

RN 38705-47-4 ZCAPLUS
 CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

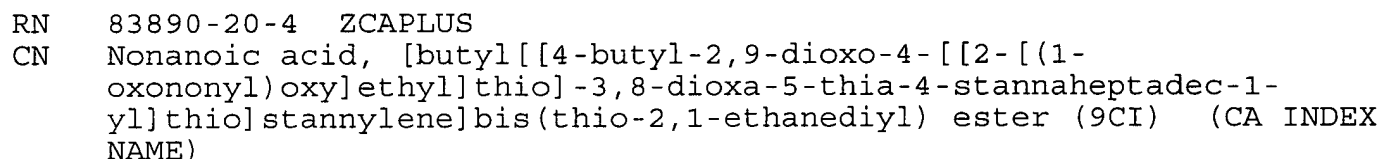
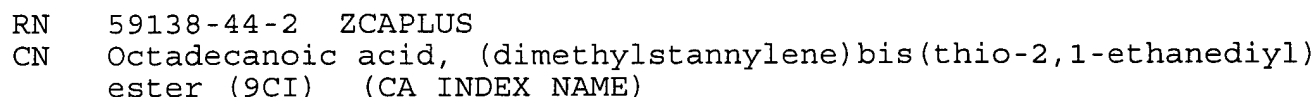


RN 59118-78-4 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 59118-80-8 ZCAPLUS
 CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)

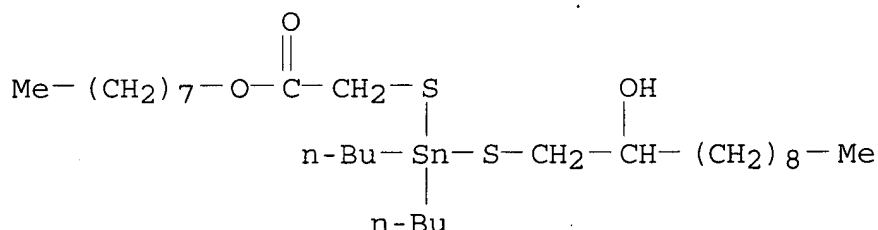

$$\begin{array}{c}
 \text{Me}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 | \\
 \text{n-Bu}-\text{Sn}-\text{O}-\overset{\text{O}}{\parallel}\text{C}-\text{CH}_2-\text{S} \\
 | \\
 \text{Me}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \qquad \text{n-Bu}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}- \\
 | \\
 \text{Me}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S}
 \end{array}$$

PAGE 1-B

— (CH₂)₇—Me

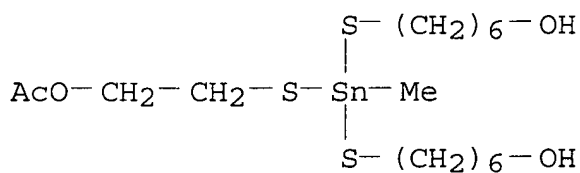
RN 85758-44-7 ZCAPLUS

CN Acetic acid, [[dibutyl[(2-hydroxyundecyl)thio]stannyl]thio]-, octyl ester (9CI) (CA INDEX NAME)



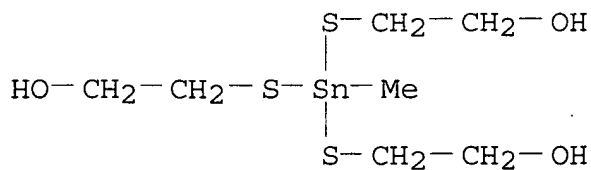
RN 85758-45-8 ZCAPLUS

CN 3-Oxa-6,8-dithia-7-stannatetradecan-14-ol, 7-[(6-hydroxyhexyl)thio]-7-methyl-2-oxo- (9CI) (CA INDEX NAME)



RN 85758-50-5 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris- (9CI) (CA INDEX NAME)



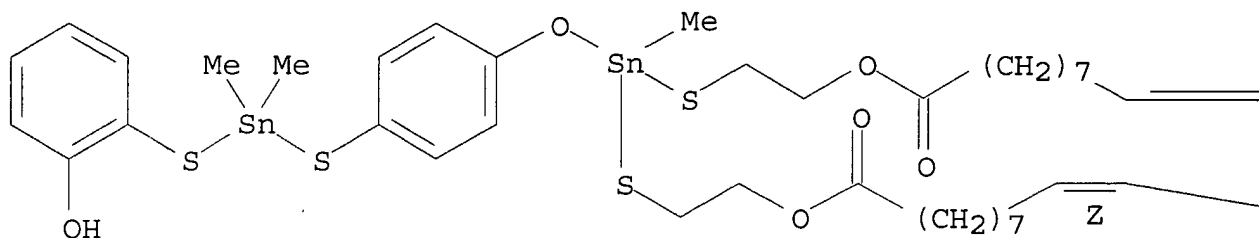
RN 85758-54-9 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, [[4-[[[(2-hydroxyphenyl)thio]dimethylstan

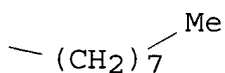
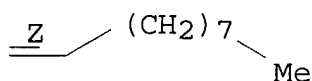
nyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



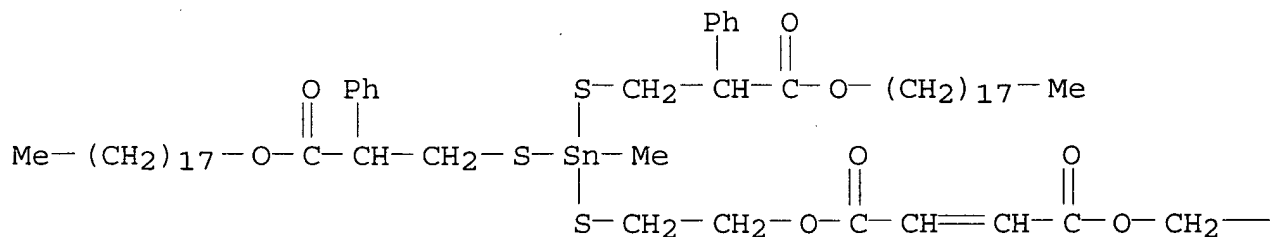
PAGE 1-B



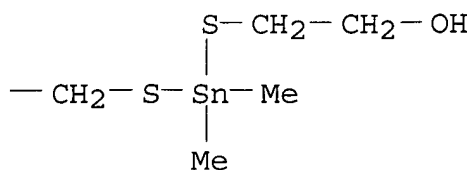
RN 85758-56-1 ZCAPLUS

CN 9-Oxa-4,6-dithia-5-stannatridec-11-enedioic acid,
5-methyl-5-[[[3-(octadecyloxy)-3-oxo-2-phenylpropyl]thio]-10-oxo-2-
phenyl-, 13-[2-[[[(2-hydroxyethyl)thio]dimethylstannyl]thio]ethyl]
1-octadecyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

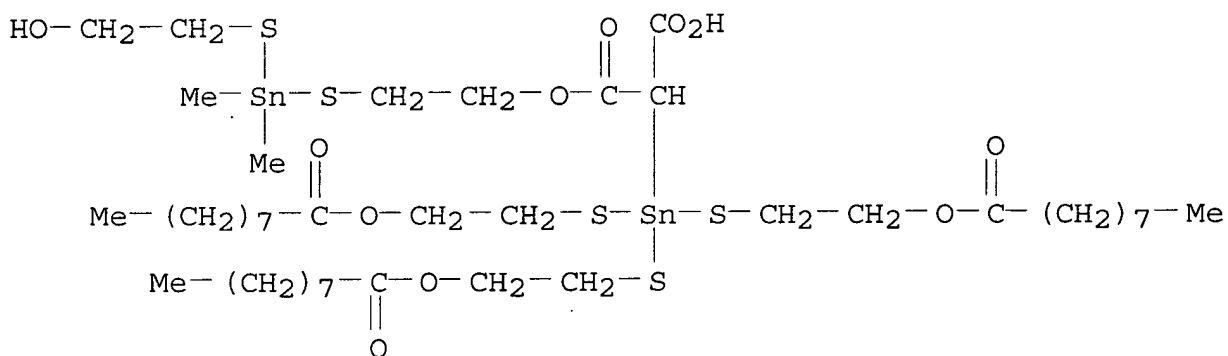


PAGE 1-B



RN 85758-57-2 ZCAPLUS

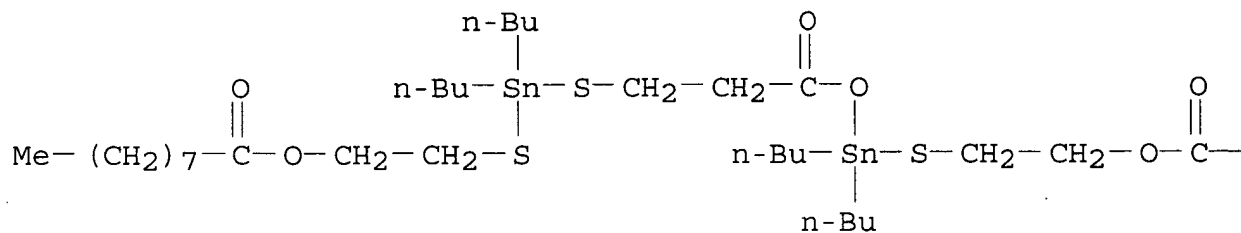
CN Propanedioic acid, [tris[[2-[(1-oxononyl)oxy]ethyl]thio]stannyl]-, mono[2-[[[(2-hydroxyethyl)thio]dimethylstannyl]thio]ethyl] ester (9CI) (CA INDEX NAME)



RN 85758-61-8 ZCAPLUS

CN Nonanoic acid, 4,4-dibutyl-6-oxo-5-oxa-3,9,11-trithia-4,10-distannatridecane-1,13-diyl ester (9CI) (CA INDEX NAME)

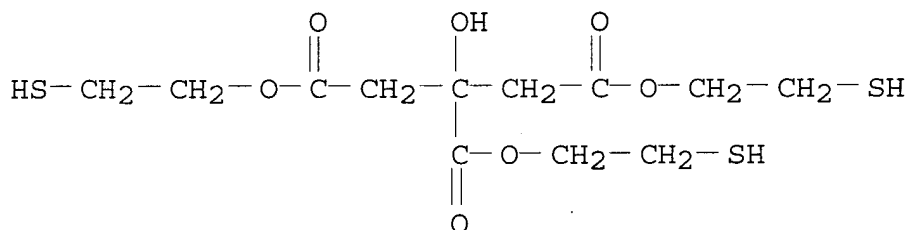
PAGE 1-A



PAGE 1-B

— (CH₂)₇—Me

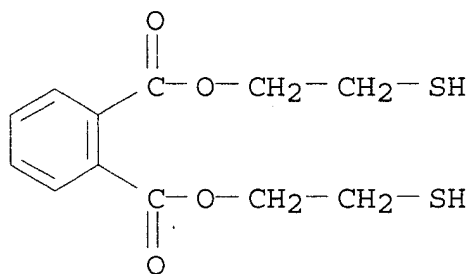
RN 85758-64-1 ZCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl)
ester (9CI) (CA INDEX NAME)

RN 85758-65-2 ZCAPLUS

CN 2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX
NAME)

RN 85758-67-4 ZCAPLUS

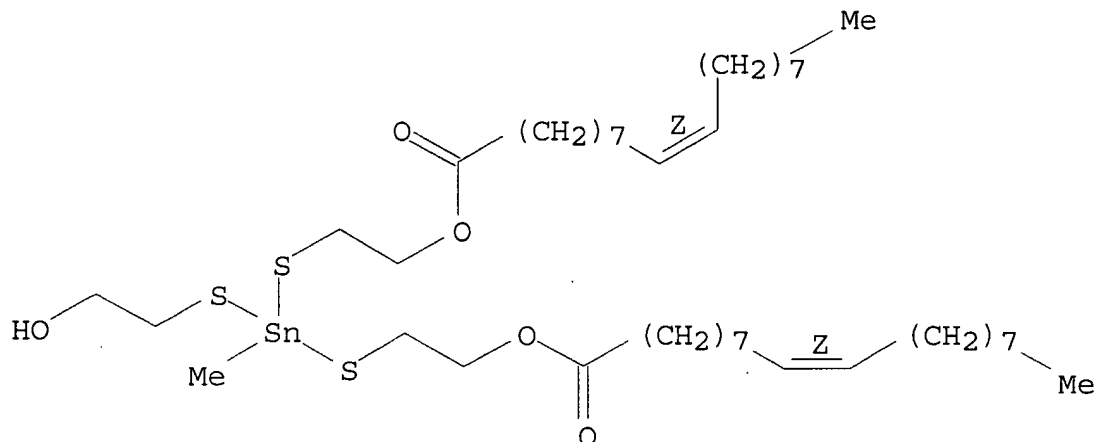
CN 1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA
INDEX NAME)

RN 85758-68-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, [[(2-hydroxyethyl)thio]methylstannylene]b

is(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 38705-47-4 59118-78-4 59118-80-8
 59138-44-2 83890-20-4 85758-44-7
 85758-45-8 85758-50-5 85758-54-9
 85758-56-1 85758-57-2 85758-61-8
 85758-64-1 85758-65-2 85758-67-4
 85758-68-5

(heat stabilizers contg., for PVC)

L21 ANSWER 16 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:199204 Document No. 98:199204 Stabilizer for halogenated resins.
 (Pennwalt Corp. , USA). Neth. Appl. NL 8101857 A 19821101, 26 pp.
 (Dutch). CODEN: NAXXAN. APPLICATION: NL 1981-1857 19810415.

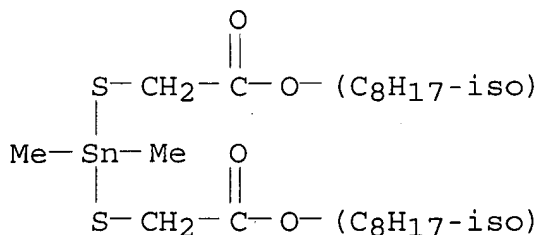
AB A heat stabilizer for preventing discoloration of halogenated
 resins, esp. vinyl chloride resins, consists of a S-contg. organotin
 compd., a tin tetrakis mercaptide, an alkali or alk. earth metal
 salt of a mercaptan or mercapto acid, and an overbased org. complex
 based on an alkali for alk. earth metal base. Thus, to.100 wt.
 parts poly(vinyl chloride) [9002-86-2] contg. the usual additives
 were added methyltin tris(2-mercaptoethyl stearate) [
 59118-76-2] 1.10, an overbased BaCO3 org. complex (prepd.
 with p-nonylphenol) 0.10 barium bis(2-mercaptoethyl stearate)
 [513-77-9] 0.15, and tin tetrakis(2-mercapoethyl stearate)
 [62568-17-6] 0.15 part in a blender. The resulting plastic did not
 change its white color for 15 min at 213.degree..

IT 26636-01-1 59118-76-2 69128-10-5

(heat stabilizers, contg. barium carbonate overbased complex, for
 PVC)

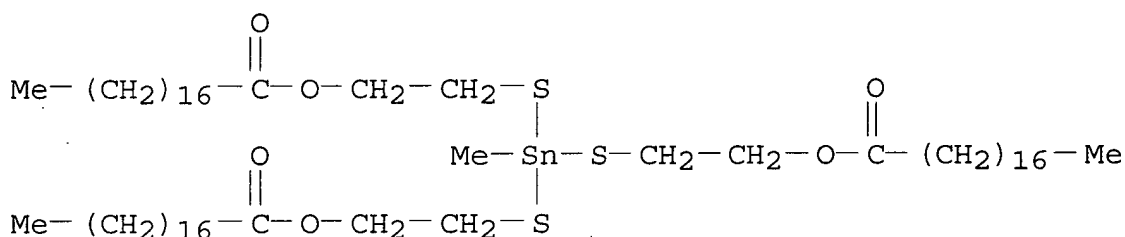
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[[(dimethylstannylene)bis(thio)]bis-, diisooctyl
 ester (9CI) (CA INDEX NAME)



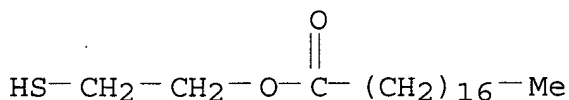
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 26636-01-1 59118-76-2 69128-10-5

(heat stabilizers, contg. barium carbonate overbased complex, for PVC)

L21 ANSWER 17 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:180439 Document No. 98:180439 Heat stabilizers for poly(vinyl chloride). (Pennwalt Corp., USA). Jpn. Kokai Tokkyo Koho JP 57174332 A2 19821027 Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1981-57235 19810417.

AB Heat-resistant PVC [9002-86-2] compns. contain 20-99:1-80 mixt. of a -CSnS- group-contg. compd. and a Sn tetramercaptide-type compd. and optionally alkali or alk. earth metal salts with mercaptans or

mercaptocarboxylic acids and/or basic alkali or alk. earth metal salt org. complexes. For example, a compn. from PVC 100, K-120N (acrylic polymer) 3.0, paraffin wax 0.5, partially saponified ester wax 0.2, Ca stearate 1.4, TiO₂ 2.0, dimethyltin bis(isooctyl thioglycolate) [26636-01-1] 1.20, and tin tetrakis(isooctyl thioglycolate) [62568-17-6] 0.30 part had yellowing resistance (at 415.degree.F) > 12 min.

IT 2781-09-1 20004-13-1 22094-92-4

26636-01-1 59118-76-2 59118-79-5

59138-44-2 65291-38-5 65301-46-4

66899-73-8 67361-76-6 67361-77-7

67859-63-6 69128-10-5 80233-79-0

82530-60-7 84435-07-4 85490-98-8

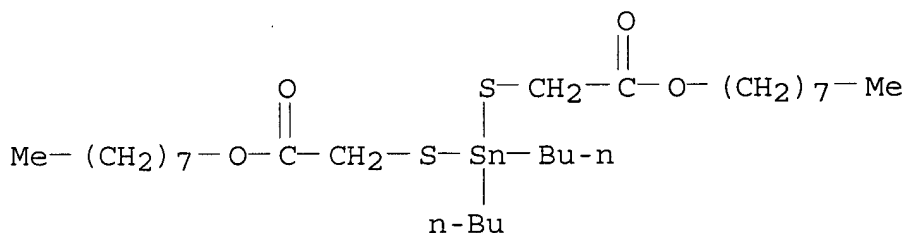
85508-79-8 85508-82-3 85508-84-5

85508-85-6

(heat stabilizers contg., for PVC)

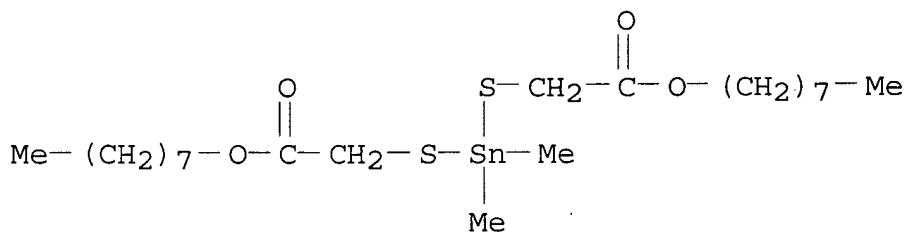
RN 2781-09-1 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dibutyl-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



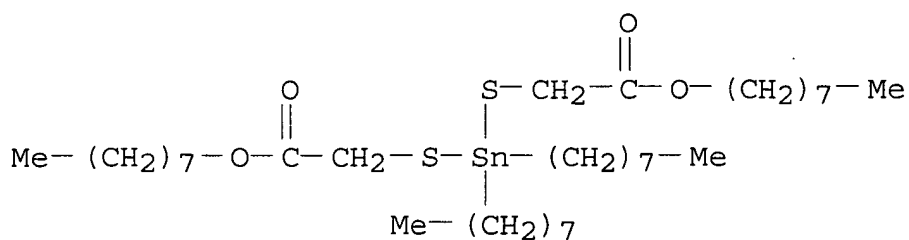
RN 20004-13-1 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dimethyl-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



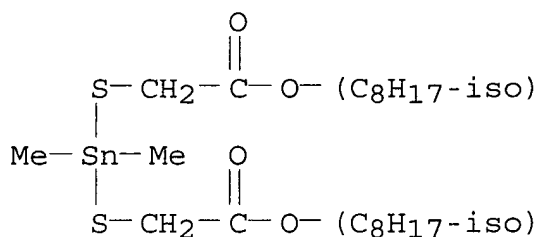
RN 22094-92-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dioctyl-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



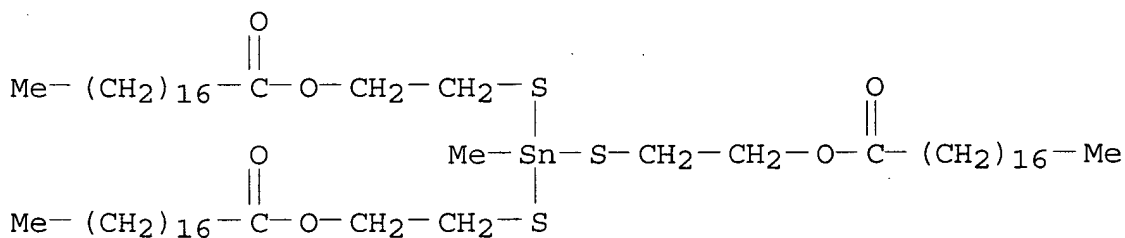
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

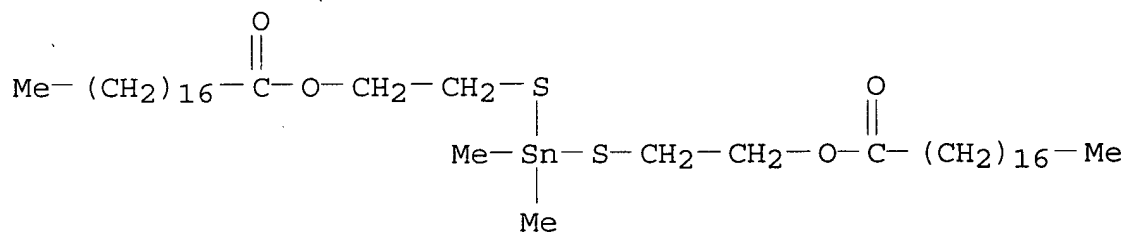


RN 59118-79-5 ZCAPLUS

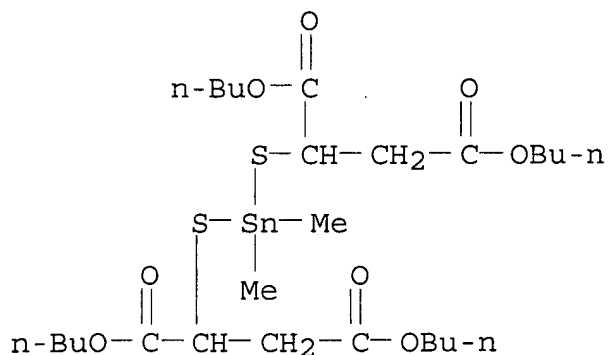
CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{O} \\ || \\ \text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\ | \\ \text{O} \quad \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}- \\ || \\ \text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array}$$
$$-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{Me}$$

CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI)	(CA INDEX NAME)
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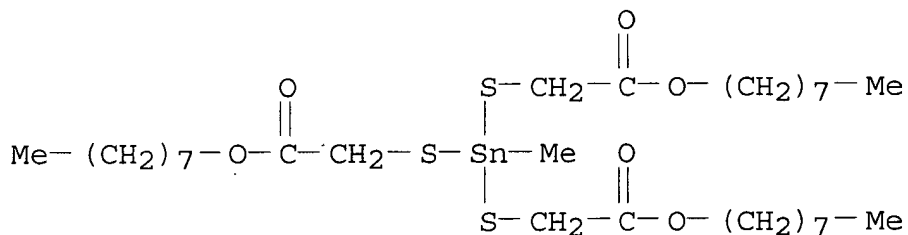


CN Butanedioic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-,
tetrabutyl ester (9CI) (CA INDEX NAME)



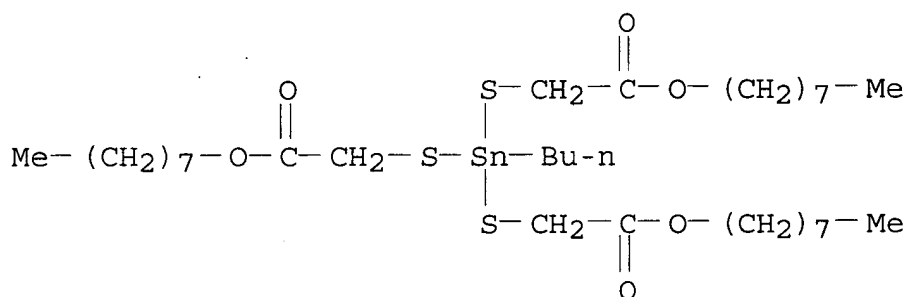
RN 65301-46-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stanna-hexadecanoic acid, 4-methyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 66899-73-8 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stanna-hexadecanoic acid, 4-butyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{Me-(CH}_2)_7\text{-CH=CH-(CH}_2)_7\text{-}\overset{\text{O}}{\parallel}\text{C-O-CH}_2\text{-CH}_2\text{-S} \\ | \\ \text{n-Bu-Sn-S-CH}_2\text{-CH}_2\text{-O-C}\overset{\text{O}}{\parallel} \\ | \\ \text{Me-(CH}_2)_7\text{-CH=CH-(CH}_2)_7\text{-}\overset{\text{O}}{\parallel}\text{C-O-CH}_2\text{-CH}_2\text{-S} \end{array}$$
$$-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{Me}$$

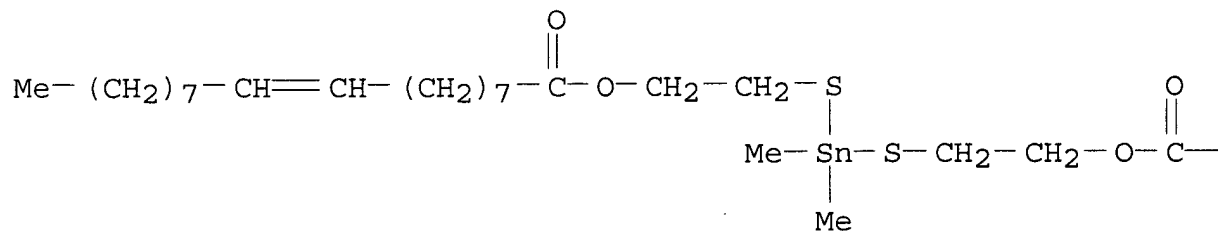
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediy) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

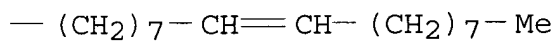
CC(CCCCCC/C=C/CCCCCCCC(=O)OCCSC(CCCC)SCCCOC(=O)C)CCCCCCCCCCCCCCCCCCCC
$$\text{---}(\text{CH}_2)_7\text{---}\underline{\text{Z}}\text{---}(\text{CH}_2)_7\text{---Me}$$

CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

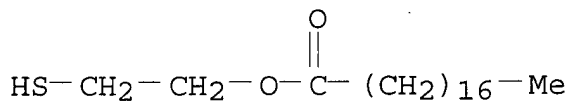


PAGE 1-B



RN 69128-10-5 ZCAPLUS

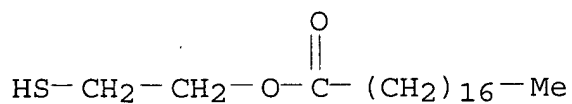
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

RN 80233-79-0 ZCAPLUS

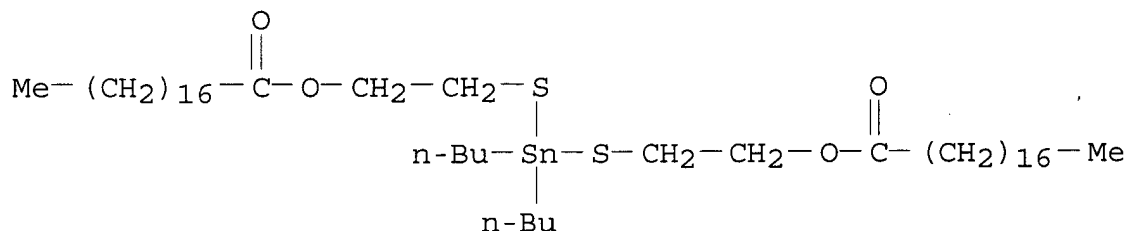
CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



1/4 Sn(IV)

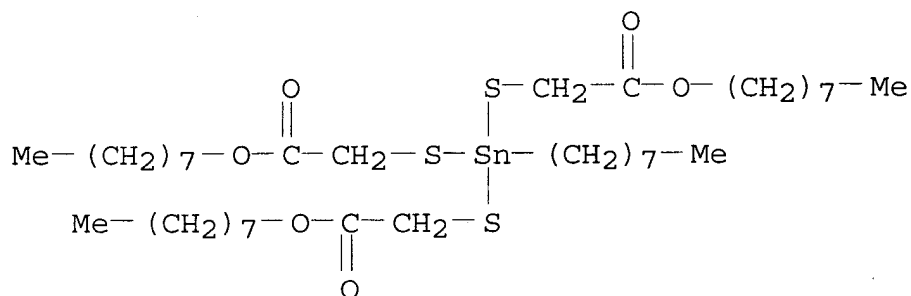
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 84435-07-4 ZCAPLUS

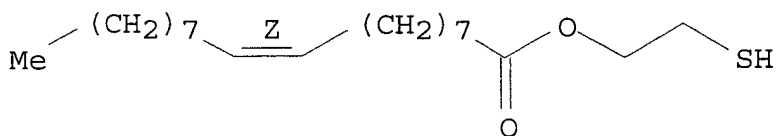
CN 8-Oxa-3,5-dithia-4-stanna-hexadecanoic acid, 4-octyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 85490-98-8 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)

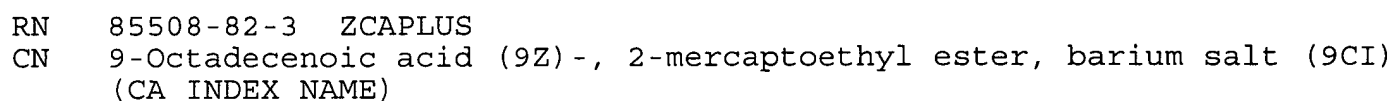
Double bond geometry as shown.



● 1/4 Sn(IV)

RN 85508-79-8 ZCAPLUS

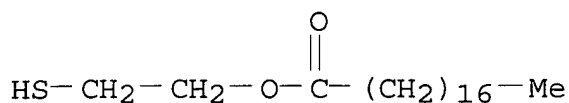
CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)


$$\text{Me}-(\text{CH}_2)_7-\text{Z}-(\text{CH}_2)_7-\text{C}(=\text{O})\text{OCH}_2\text{CH}_2\text{SH}$$

RN	85508-84-5	ZCAPLUS
CN	9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)	
	(CA INDEX NAME)	

CCCCCCCCC=CCCCCCCCC(=O)OCCS

RN	85508-85-6	ZCAPLUS		
CN	Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI)	(CA		
	INDEX NAME)			



● 1/2 Ca

IT 2781-09-1 20004-13-1 22094-92-4
 26636-01-1 59118-76-2 59118-79-5
 59138-44-2 65291-38-5 65301-46-4
 66899-73-8 67361-76-6 67361-77-7
 67859-63-6 69128-10-5 80233-79-0
 82530-60-7 84435-07-4 85490-98-8
 85508-79-8 85508-82-3 85508-84-5
 85508-85-6

(heat stabilizers contg., for PVC)

L21 ANSWER 18 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5118 Document No. 98:5118 Polymer stabilizing compositions.
 Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab
 Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.
 PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

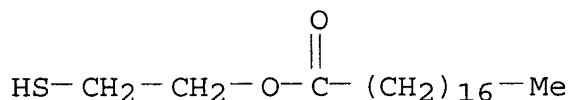
AB Effective heat stabilizers for polymers comprise .gtoreq.1
 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1
 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated
 CaCO₃ 3.0, TiO₂ 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized
 polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7]
 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were
 dry blended at 110.degree.. The mixt. was then roll milled at
 193.degree., the color turning from white to tan-orange in 5-6 min.

IT 27564-01-8 59118-78-4 59118-80-8
 59138-44-2 83890-17-9

(heat stabilizer compns. contg., for PVC)

RN 27564-01-8 ZCAPLUS

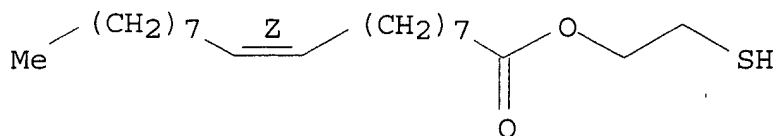
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

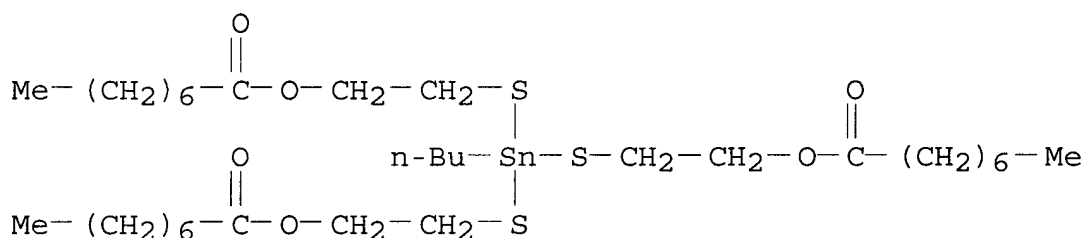
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX
 NAME)

Double bond geometry as shown.



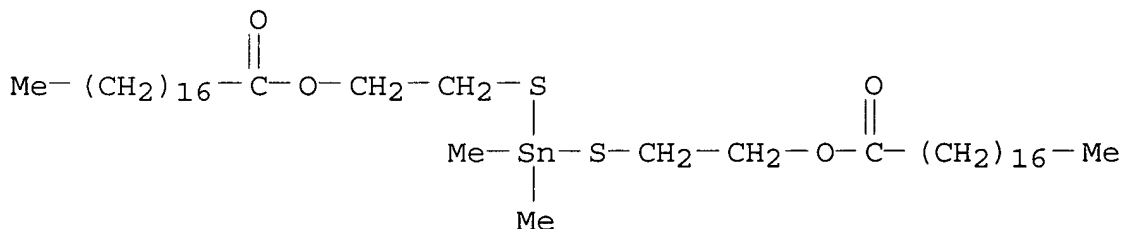
RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



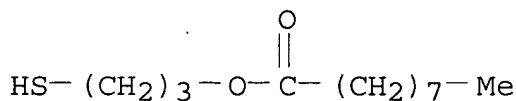
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



IT 27564-01-8 59118-78-4 59118-80-8

59138-44-2 83890-17-9

(heat stabilizer compns. contg., for PVC)

L21 ANSWER 19 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5117 Document No. 98:5117 Polymer stabilizing compositions and

their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225. PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

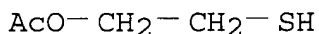
AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane 0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl 3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride [993-16-8] 0.01 part were dry blended at 110.degree.. The compn. was then roll milled at 193.degree., requiring 6 min for a color change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8
59118-78-4 59118-80-8 59138-44-2
83890-17-9 83890-18-0 83890-20-4
83899-94-9

(heat stabilizer compns. contg., for PVC)

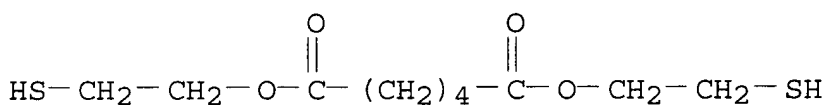
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



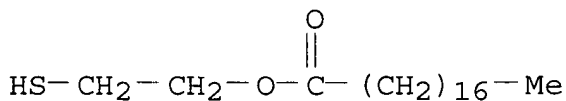
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 27564-01-8 ZCAPLUS

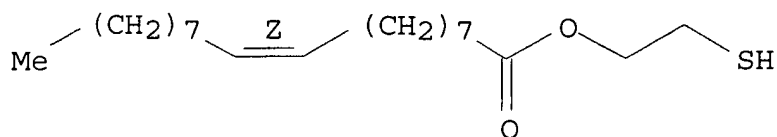
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



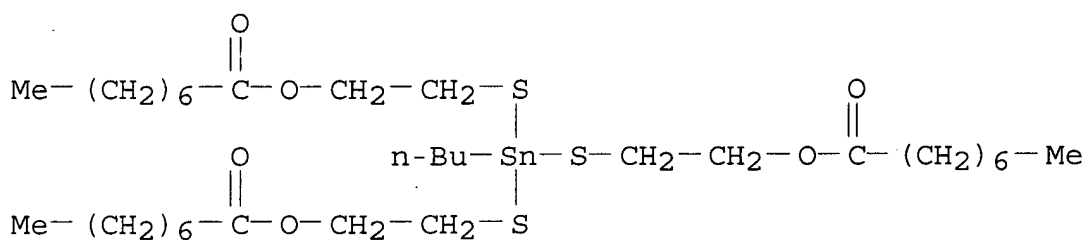
RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

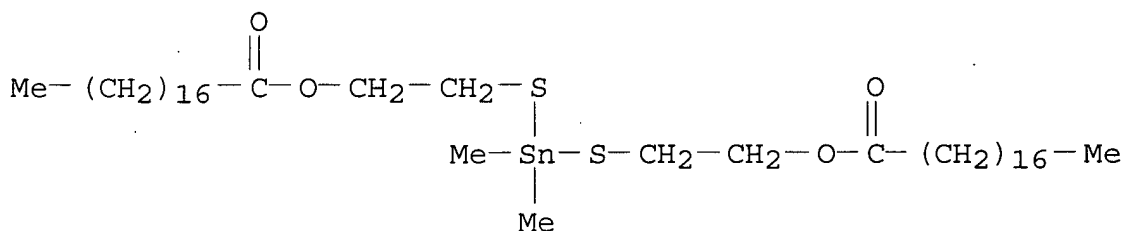
Double bond geometry as shown.



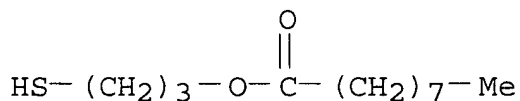
CN	Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
----	---



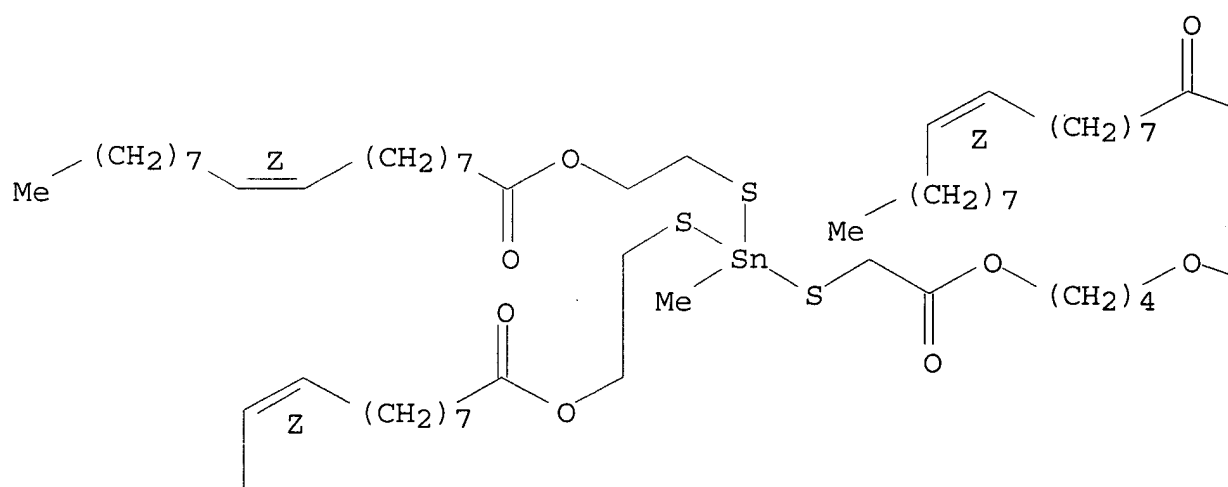
CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



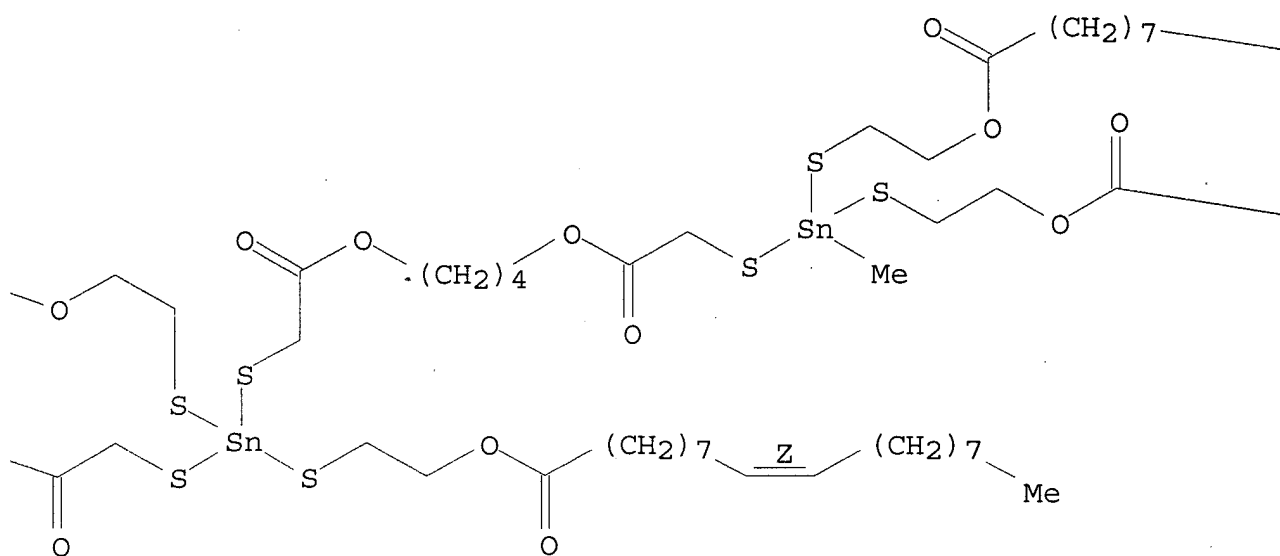
CN 8,13,21-Trioxa-3,5,16,18-tetrathia-4,17-distannanonatriacont-30-
enoic acid, 17-methyl-7,14,22-trioxo-4,4,17-tris[[2-[(1-oxo-9-
octadecenyl)oxy]ethyl]thio]-, 9-methyl-6,14-dioxo-9-[[2-[(1-oxo-9-
octadecenyl)oxy]ethyl]thio]-5,13-dioxa-8,10-dithia-9-
stannahentriacont-22-en-1-yl ester, (all-Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

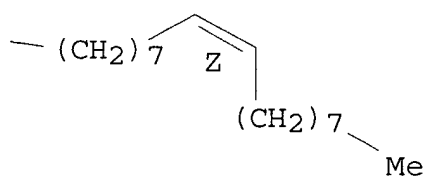
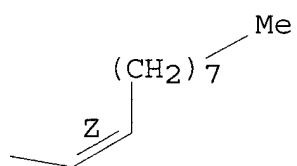
PAGE 1-A



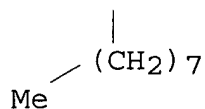
PAGE 1-B



PAGE 1-C

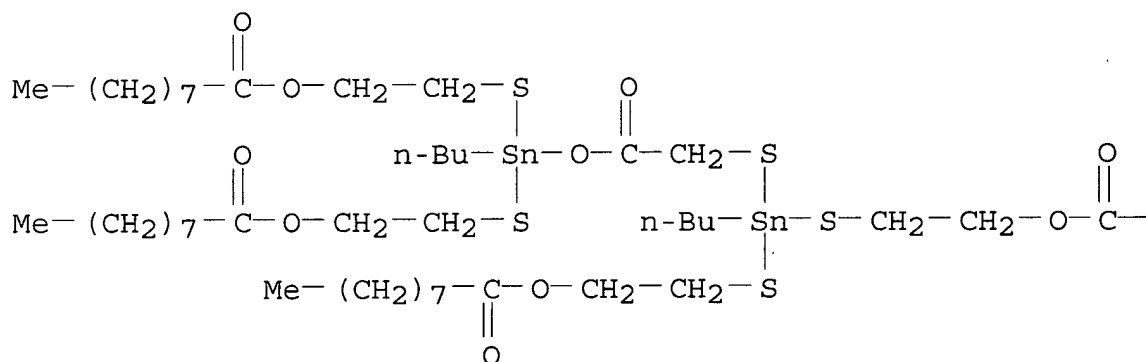


PAGE 2-A

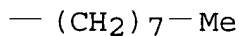


RN 83890-20-4 ZCAPLUS
 CN Nonanoic acid, [butyl[[4-butyl-2,9-dioxo-4-[[2-[(1-oxononyl)oxy]ethyl]thio]-3,8-dioxa-5-thia-4-stannaheptadec-1-yl]thio]stannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

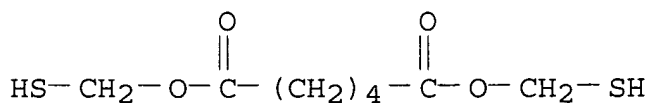
PAGE 1-A



PAGE 1-B



RN 83899-94-9 ZCAPLUS
 CN Hexanedioic acid, bis(mercaptomethyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 10194-00-0 27564-01-8

59118-78-4 59118-80-8 59138-44-2
 83890-17-9 83890-18-0 83890-20-4
 83899-94-9

(heat stabilizer compns. contg., for PVC)

L21 ANSWER 20 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:493439 Document No. 97:93439 Sterilization of vinyl halide polymer articles with ionizing radiations. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50070 A2 19820421, 19 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401511 19810930. PRIORITY: FR 1980-21662 19801010.

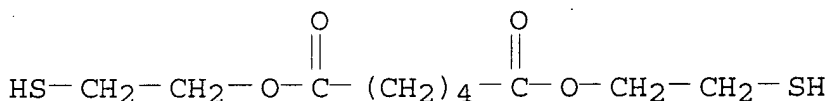
AB An organotin compd. or organoantimony compd. and a thiol (contg. 1 SH group/3-10 C) are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3% glycerol bis(mercaptoacetate) I [63657-12-5] and exposed to .gamma. radiation (2.76 Mrad). The resin was colorless. A resin contg. no I was strongly discolored after irradiation.

IT 10194-00-0 26401-97-8 82530-57-2
 82530-58-3 82530-59-4 82530-60-7
 82530-61-8 82538-18-9

(stabilization of PVC against ionizing radiation by)

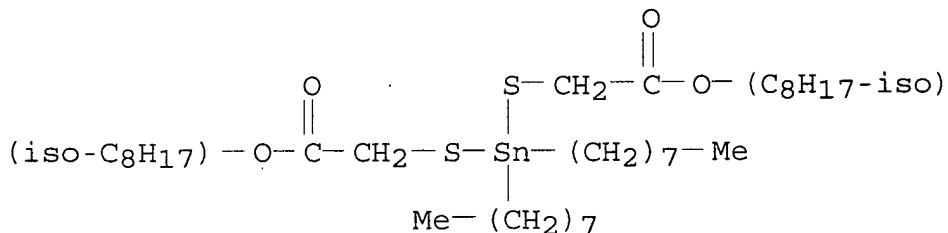
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



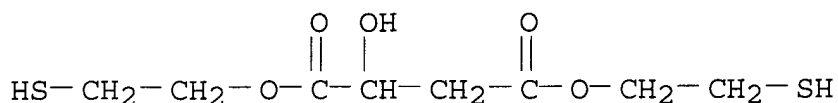
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



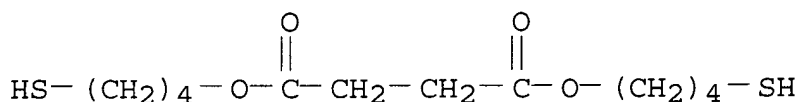
RN 82530-57-2 ZCAPLUS

CN Butanedioic acid, hydroxy-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



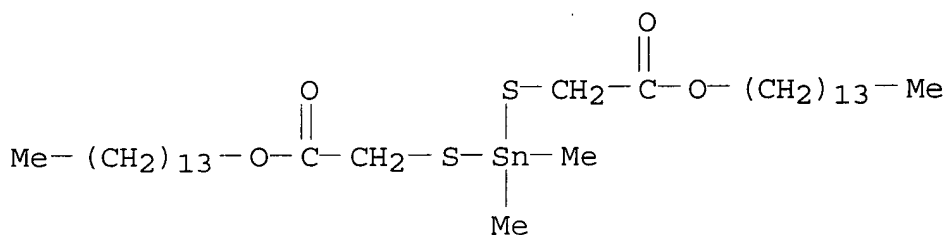
RN 82530-58-3 ZCAPLUS

CN Butanedioic acid, bis(4-mercaptobutyl) ester (9CI) (CA INDEX NAME)



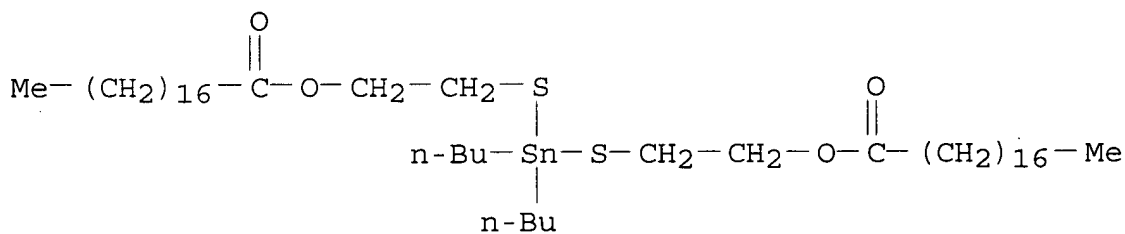
RN 82530-59-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4,4-dimethyl-7-oxo-, tetradecyl ester (9CI) (CA INDEX NAME)



RN 82530-60-7 ZCAPLUS

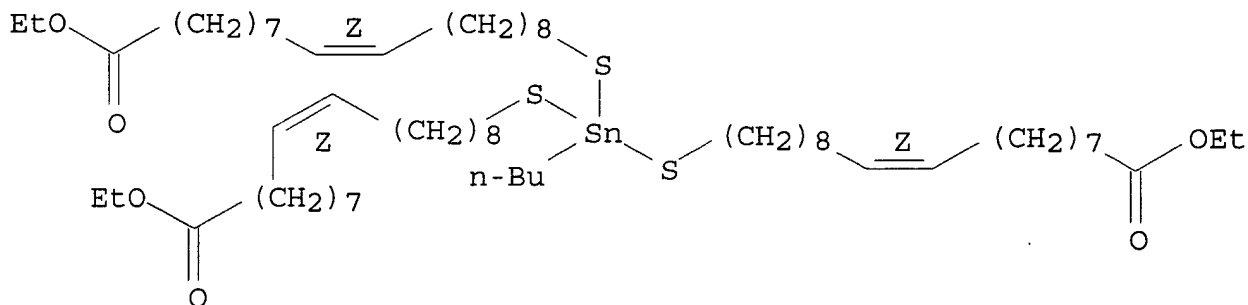
CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 82530-61-8 ZCAPLUS

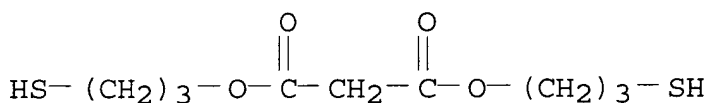
CN 3-Oxa-22,24-dithia-23-stannadotetraconta-12,33-dien-42-oic acid, 23-butyl-23-[(18-ethoxy-18-oxo-9-octadecenyl)thio]-4-oxo-, ethyl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 82538-18-9 ZCAPLUS

CN Propanedioic acid, bis(3-mercaptopropyl) ester (9CI) (CA INDEX NAME)



IT 10194-00-0 26401-97-8 82530-57-2
82530-58-3 82530-59-4 82530-60-7
82530-61-8 82538-18-9

(stabilization of PVC against ionizing radiation by)

L21 ANSWER 21 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1982:493438 Document No. 97:93438 Polymers resistant against ionizing radiation. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50071 A2 19820421, 18 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401512 19810930. PRIORITY: FR 1980-21816 19801013.

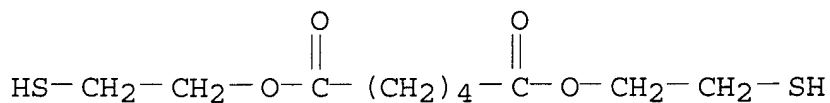
AB An organotin or organoantimony compd., a thiol, and hydroquinone (I) [123-31-9] are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3% bis(2-mercaptoethyl) adipate (II) [10194-00-0] and 0.5% I and exposed to .gamma. radiation (2.76 Mrad). The resin was slightly discolored. A resin contg. no I was slightly more discolored. A resin contg. no I or II was strongly discolored.

IT 10194-00-0 26401-97-8 27564-01-8
82530-59-4 82530-60-7 82530-61-8

(stabilization of PVC against ionizing radiation by)

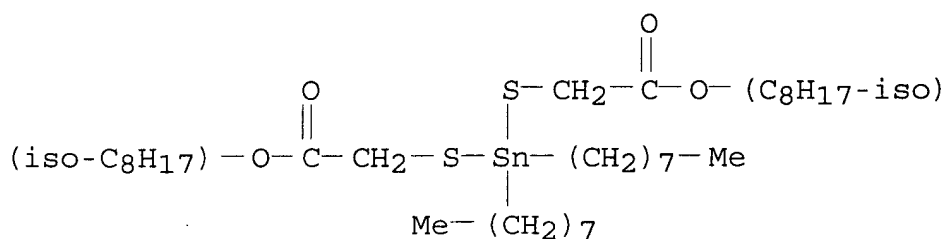
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



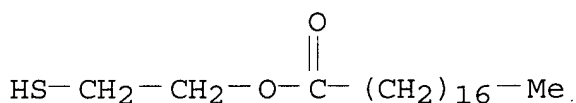
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



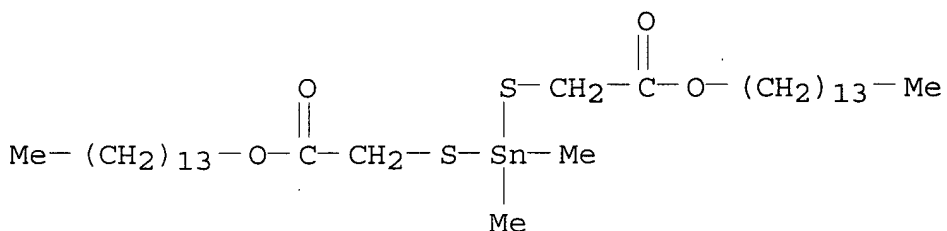
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



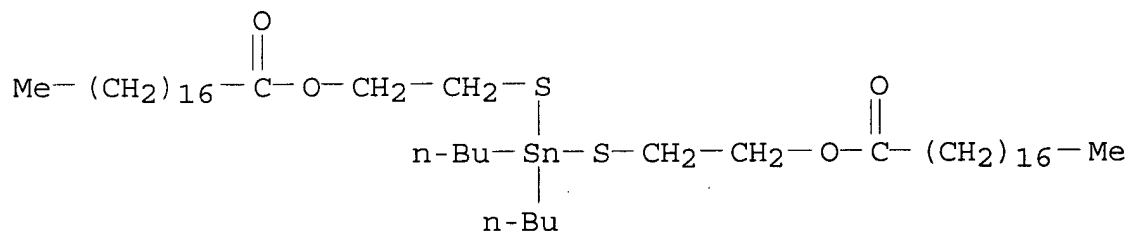
RN 82530-59-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4,4-dimethyl-7-oxo-, tetradecyl ester (9CI) (CA INDEX NAME)



RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

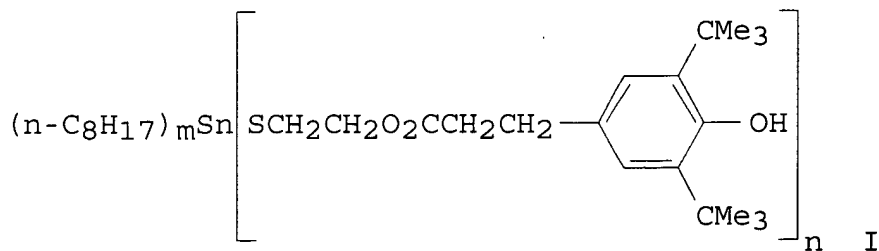


CN 3-Oxa-22,24-dithia-23-stannadotetraconta-12,33-dien-42-oic acid,
23-butyl-23-[(18-ethoxy-18-oxo-9-octadecenyl)thio]-4-oxo-, ethyl
ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

[illegible]

L21 ANSWER 22 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1982:407227 Document No. 97:7227 Metal mercaptides of esters of
.beta.-mercapto alkanols, their use as stabilizers and organic
materials stabilized therewith. Knobloch, Gerrit; Wehner, Wolfgang;
Wirth, Hermann O. (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP
34118 A2 19810819, 23 pp. DESIGNATED STATES: R: BE, DE, FR, GB,
IT, NL. (German). CODEN: EPXXDW. APPLICATION: EP 1981-810027
19810202. PRIORITY: CH 1980-1036 19800208.

GI



AB Metal mercaptides of mercaptoalkanol esters of sterically hindered hydroxyphenylalkanecarboxylic acids are useful stabilizers for Cl-contg. thermoplastics, elastomers, and lubricants. Thus, 8.4 g NaHCO₃ was added to a soln. of di-n-octyltin dichloride [3542-36-7] and 23.7 g .beta.-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid 2-mercaptoethyl ester [27568-68-9] in 100 mL CHCl₃. The water formed in the reaction was azeotropically distd. and the reaction soln. was filtered and evapd. in vacuo to give 36.4 g mercaptide with the structure I (m = 2; n = 2) [80048-75-5]. PVC [9002-86-2] (100 Parts) contg. montanic acid ester 0.2, Castor oil 1, and I) (m = 1, n = 3) [80048-76-6] was blended at 180.degree. and rolled at 200.degree.. The yellowness index of the compn. was 4.8, 6.0, 7.8, 9.3, 12.6, and 22.6 after 3, 6, 9, 12, 15, and 18 min, resp.

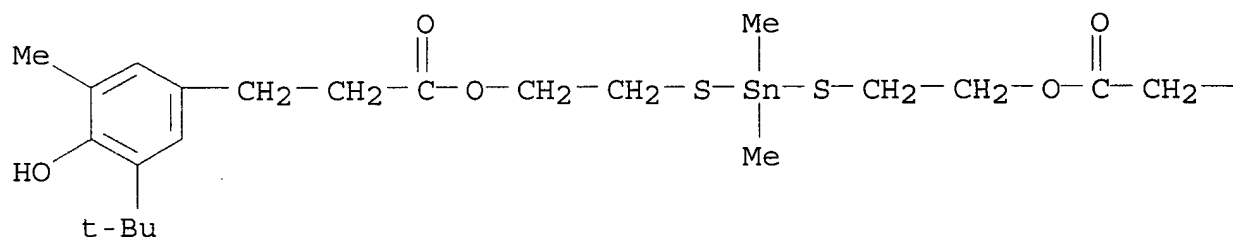
IT 80048-71-1 80048-72-2 80048-73-3
80048-74-4 80048-75-5 80048-76-6
80822-84-0

(heat stabilizers, for chlorine-contg. thermoplastics, rubbers and lubricants)

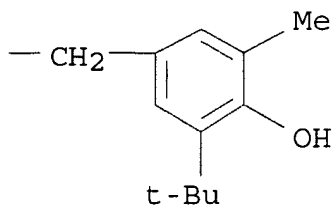
RN 80048-71-1 ZCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-methyl-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



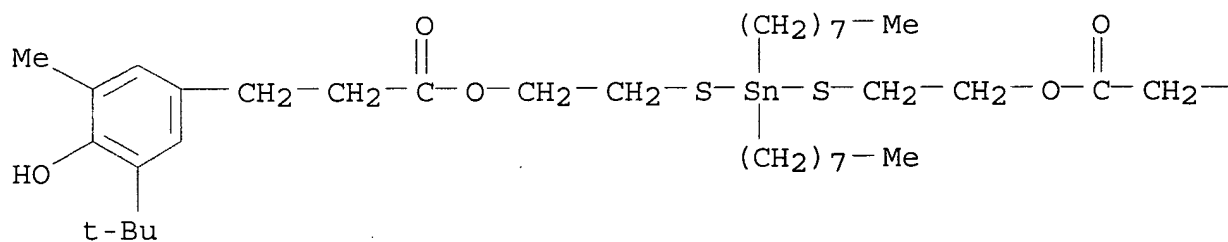
PAGE 1-B



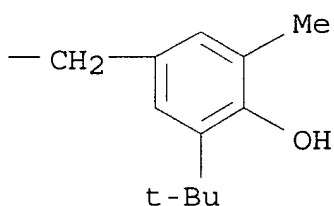
RN 80048-72-2 ZCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-methyl-,
(dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
NAME)

PAGE 1-A



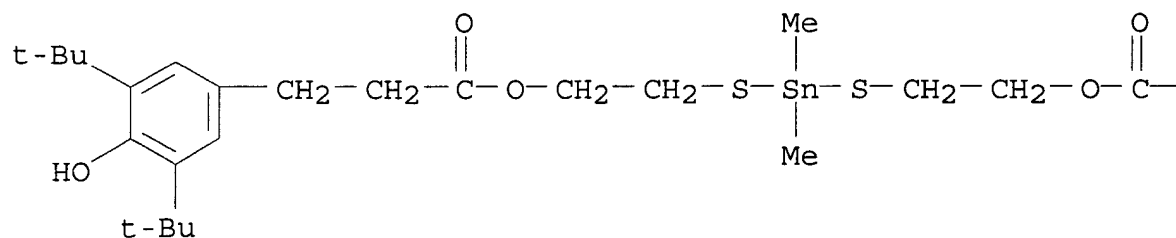
PAGE 1-B



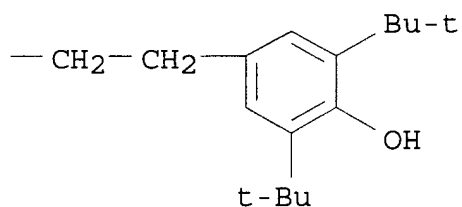
RN 80048-73-3 ZCAPLUS

CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
(dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
NAME)

PAGE 1-A



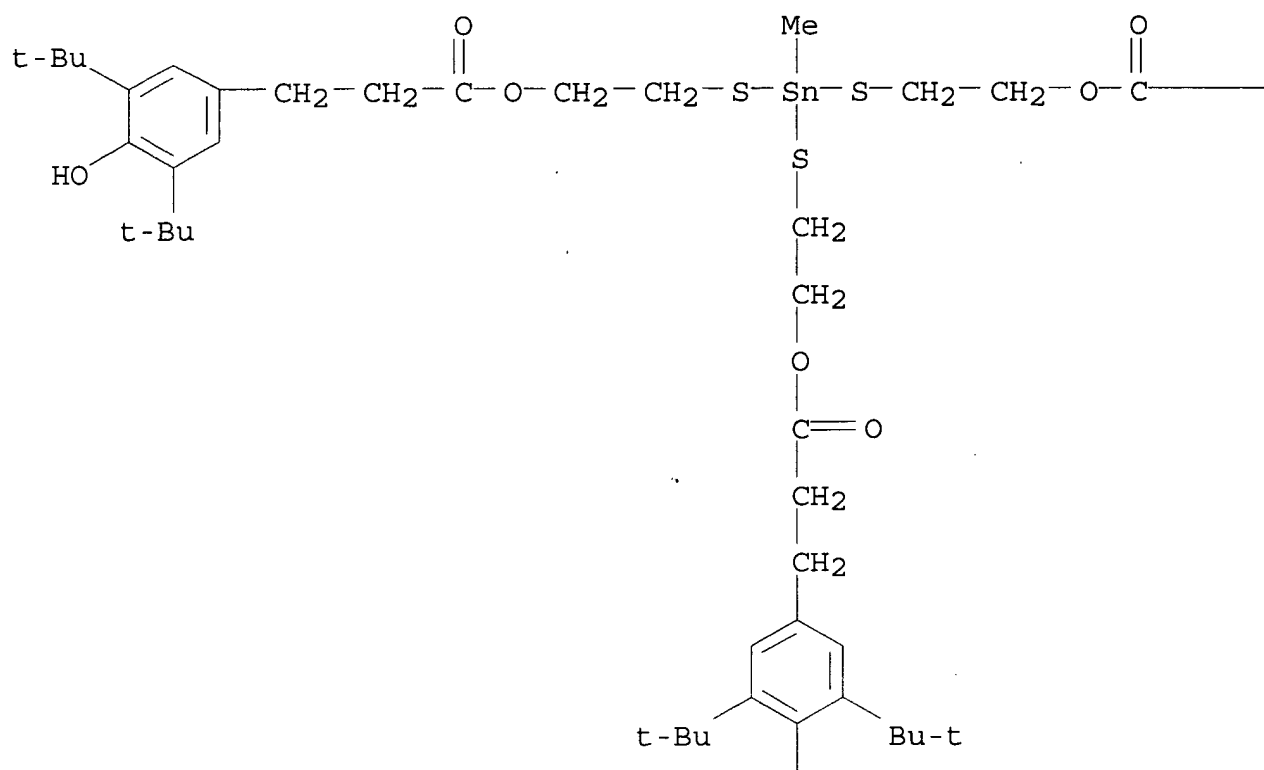
PAGE 1-B



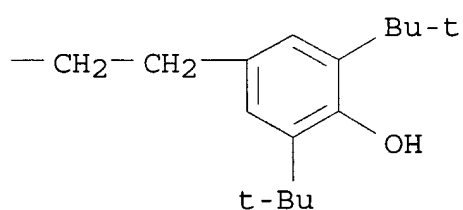
RN 80048-74-4 ZCAPLUS

CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A



PAGE 1-B



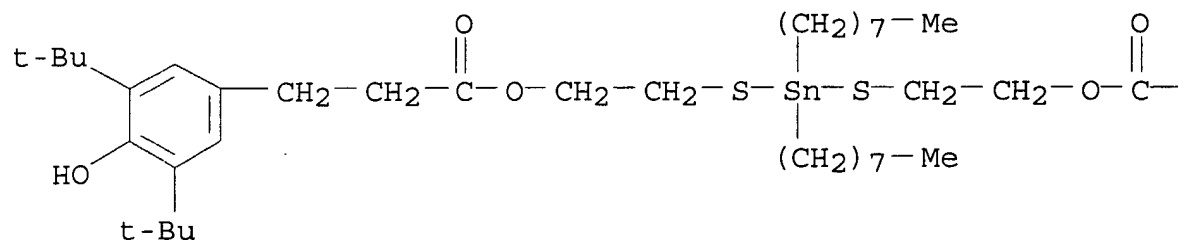
PAGE 2-A



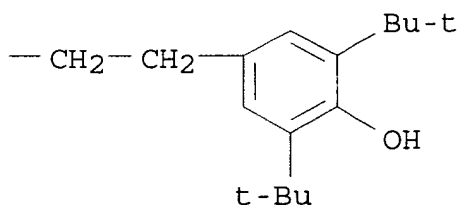
RN 80048-75-5 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX

NAME)

PAGE 1-A

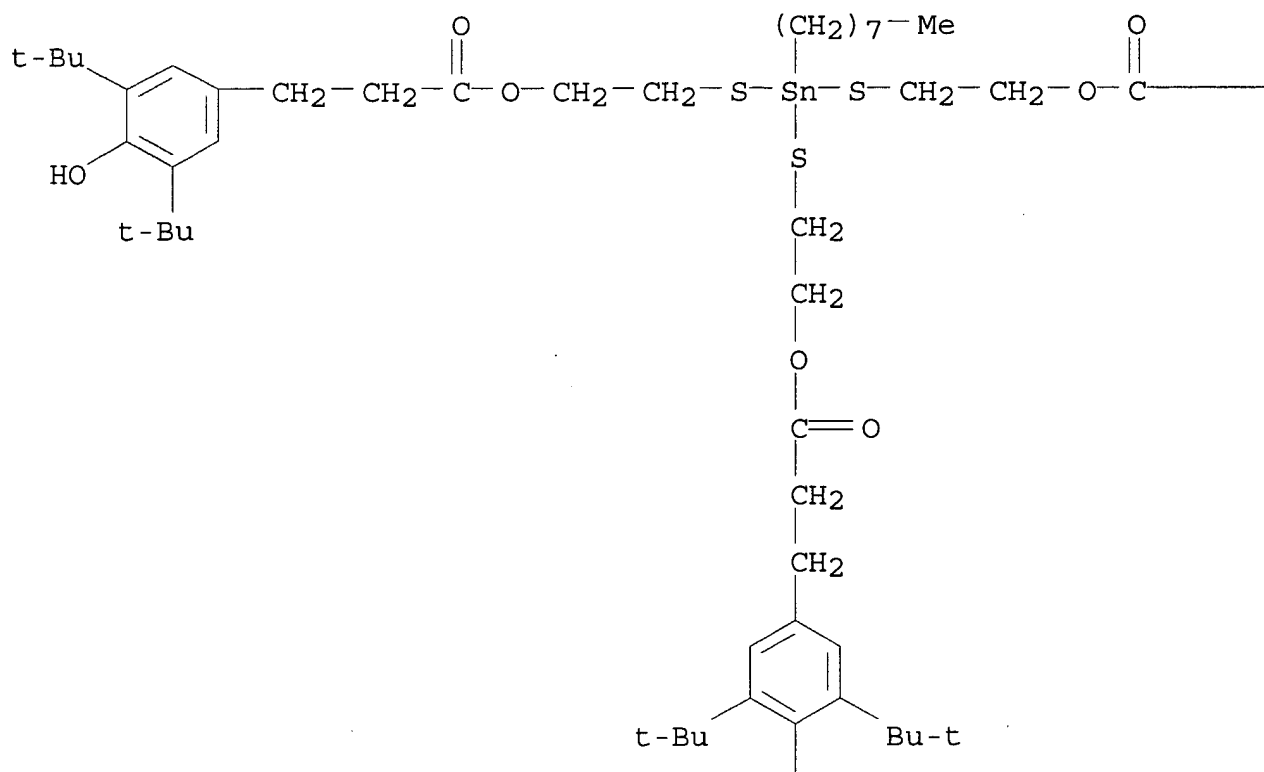


PAGE 1-B

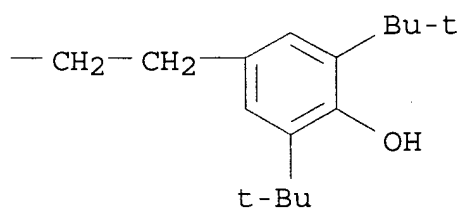


RN 80048-76-6 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (octylstannilydyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A



PAGE 1-B

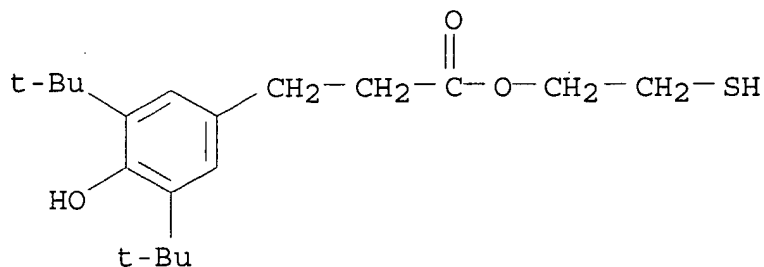


PAGE 2-A



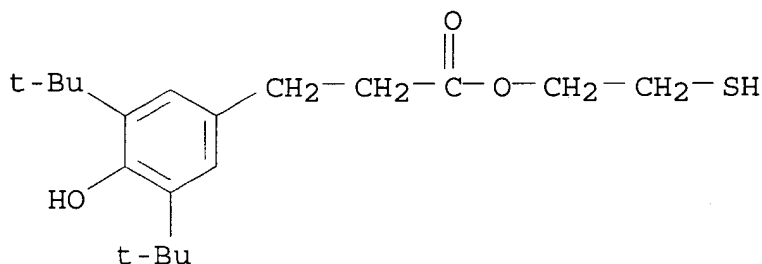
RN 80822-84-0 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 2-mercaptoethyl ester, antimony(3+) salt (3:1) (9CI) (CA INDEX)

NAME)



● 1/3 Sb(III)

IT 27568-68-9
 (reaction of, with metal compds.)
 RN 27568-68-9 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 80048-71-1 80048-72-2 80048-73-3
 80048-74-4 80048-75-5 80048-76-6
 80822-84-0
 (heat stabilizers, for chlorine-contg. thermoplastics, rubbers
 and lubricants)
 IT 27568-68-9
 (reaction of, with metal compds.)

L21 ANSWER 23 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1982:36257 Document No. 96:36257 Thermal stabilization compositions
 for halogenated resins. Bohen, J. M. (Pennwalt Corp. , USA). Belg.
 BE 888346 A1 19810731, 35 pp. (French). CODEN: BEXXAL.
 APPLICATION: BE 1981-204426 19810409. PRIORITY: US 1980-128606
 19800310.
 AB (Iso-C8H17O2CCH2S)2SnMe2 (I) [26636-01-1] or
 (C17H35CO2CH2CH2S)3SnMe [59118-76-2],
 (iso-C8H17O2CCH2S)4Sn (II) [62568-17-6] or (C17H35CO2CH2CH2S)4Sn [

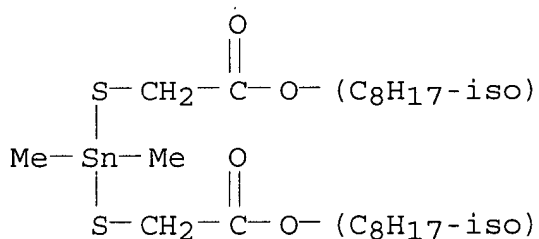
80233-79-0], and, in some cases, $(C_{17}H_{35}CO_2CH_2CH_2S)_2Ba$ [69128-10-5] and/or a basic $BaCO_3$ compn. are added to PVC [9002-86-2] as heat stabilizers. Thus, a mixt. of PVC 100, Et acrylate-Me methacrylate copolymer 3, waxes 0.7, Ca stearate 1.4, TiO_2 2, I 1.2, and II 0.3 g was stable for >12 min during processing at 215.degree..

IT 26636-01-1 59118-76-2 69128-10-5
80233-79-0

(heat stabilizers, for PVC)

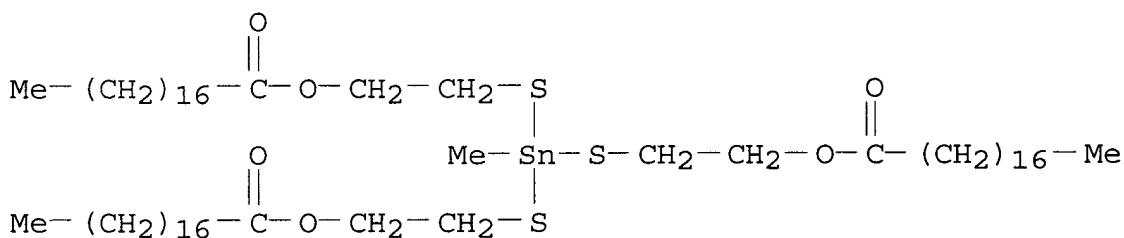
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



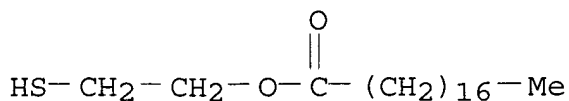
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



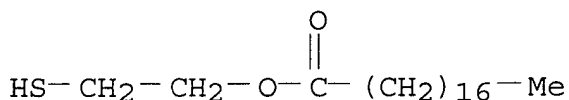
RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

RN 80233-79-0 ZCAPLUS
CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



● 1/4 Sn(IV)

IT 26636-01-1 59118-76-2 69128-10-5
80233-79-0
(heat stabilizers, for PVC)

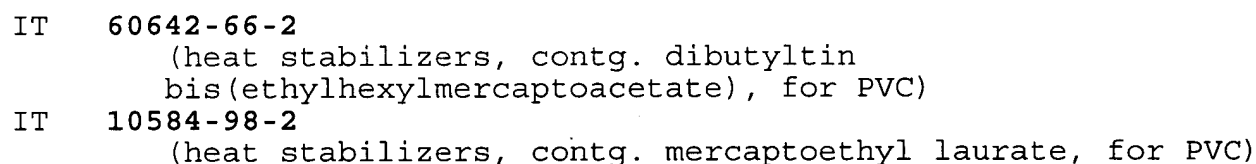
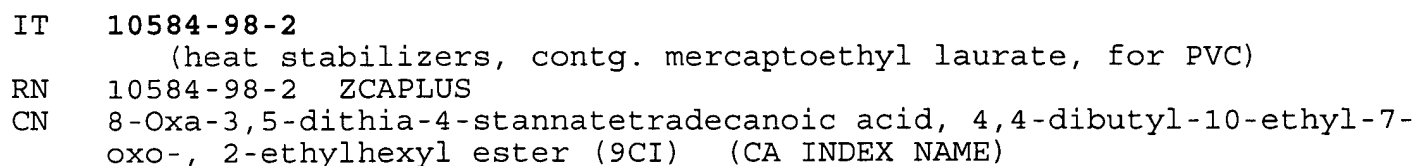
*Translation ordered for EIC
2/3/04*

L21 ANSWER 24 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1981:176132 Document No. 94:176132 Stabilized halogen-containing resin compositions. (Adeka-Argus Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP (55160044) 19801212 Showa, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1979-66831 19790531.

AB Organotin mercaptocarboxylic acid esters and carboxylic acid mercaptoalkyl esters are used as heat stabilizers. Thus, a compn. of Geon 103 EP [9002-86-2] 100, dibutyltin bis(2-ethylhexylmercaptoacetate) [10584-98-2] 0.4, paraffin wax 1, polyethylene wax 0.5, Ca stearate 1, and 2-mercaptoethyl laurate (I) [60642-66-2] 0.1 part had thermal stability 115 min and melt flow index 5.7 at 190.degree.; compared with 75 and 3.8, resp., for a similar compn. contg. no I.

IT 60642-66-2
(heat stabilizers, contg. dibutyltin bis(ethylhexylmercaptoacetate), for PVC)

RN 60642-66-2 ZCAPLUS
CN Dodecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)


$$\begin{array}{c}
 \text{RS} \\
 | \\
 \text{Bu}-\text{Sn}-\text{S}-\text{CH}_2\text{CH}_2\text{O}-\text{C}(=\text{O}) \\
 | \\
 \text{S} \\
 | \\
 \text{Bu}-\text{Sn}-\text{S}-\text{CH}_2\text{CH}_2\text{O}-\text{C}(=\text{O}) \\
 | \\
 \text{HOCH}_2\text{CH}_2\text{S}
 \end{array}
 \begin{array}{c}
 \text{O} \\
 || \\
 (\text{CH}_2)_7 \\
 || \\
 \text{O}
 \end{array}$$

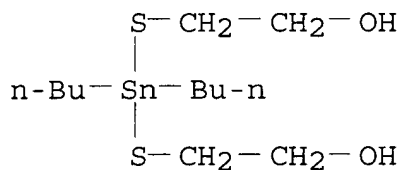
AB Approx. 20 organotin sulfide esters were prepd. by various procedures. Thus, 0.4 mol BuSnCl_3 , 0.8 mol NH_4OH , 0.2 mol $\text{HSCH}_2\text{CH}_2\text{OH}$, 0.2 mol $\text{Me}(\text{CH}_2)_{11}\text{SH}$, 0.2 mol $\text{HSCH}_2\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_7\text{CO}_2\text{CH}_2\text{CH}_2\text{SH}$, and 233 mol H_2O , was heated to 70.degree. 0.5 h by 0.2 mol Na_2S addn., the mixt. heated at 75.degree. 0.5 h, and the pH adjusted to 7 with NH_4OH to give 88 g I (R = n-dodecyl). Also prepd. were $[(\text{BuSn}(\text{S})\text{SCH}_2\text{CH}_2\text{O})_4\text{M}]$ (M = Si, Ti), $[\text{BuSn}(\text{S})\text{SCH}_2\text{CH}_2\text{O}]_3\text{M}$ (M = B, P, Al), and I (R = $\text{CH}_2\text{CO}_2(\text{CH}_2)_5\text{CHMe}_2$). The compds. prepd. were useful as heat stabilizers for halogenated polymers such as PVC.

IT 3026-81-1P 70729-71-4P

(prepn. of)

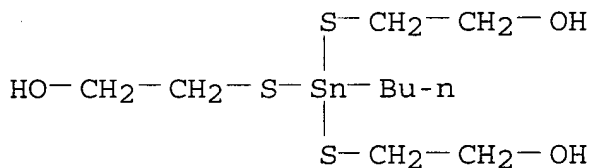
RN 3026-81-1 ZCAPLUS

CN Ethanol, 2,2'-[(dibutylstannylene)bis(thio)]bis- (9CI) (CA INDEX NAME)



RN 70729-71-4 ZCAPLUS

CN Ethanol, 2,2',2''-[(butylstannylidyne)tris(thio)]tris- (9CI) (CA INDEX NAME)

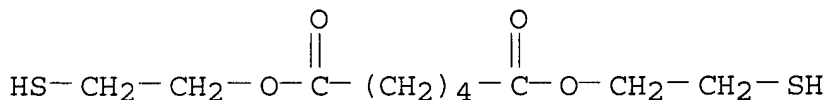


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

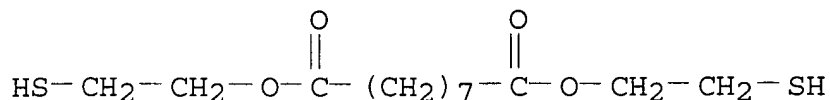
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 3026-81-1P 70729-71-4P

(prepn. of)

IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

L21 ANSWER 26 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1980:472945 Document No. 93:72945 Stabilization of halogenated vinyl resins. (Societe Nationale Elf Aquitaine S. A., Fr.). Jpn. Kokai Tokkyo Koho JP 55031900 19800306 Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1979-108744 19790828.

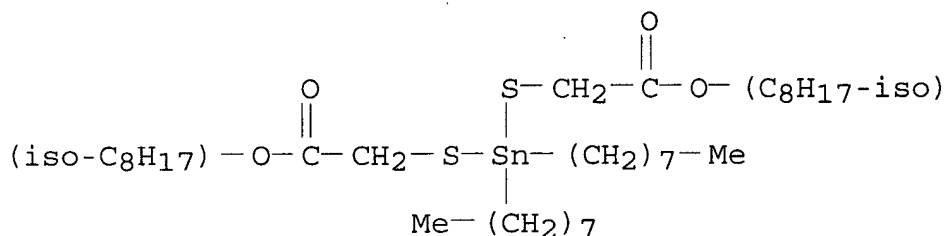
AB Mercaptans such as mercaptoethyl stearate (I) [27564-01-8] and 3-thioglyceryl myristate [74340-54-8] and metal compds. such as (dioctyltin)bis(isooctyl mercaptoacetate) (II) [26401-97-8] and BuSnO_2H [2273-43-0] were used as heat stabilizers. Thus, a mixt. of PVC [9002-86-2] 100, wax 0.5, I 1, and II 0.07 part had browning time 9 min at 180.degree., compared with 5 min for a similar mixt. contg. no I.

IT 26401-97-8

(heat stabilizers, contg. mercaptoethyl stearate, for PVC)

RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

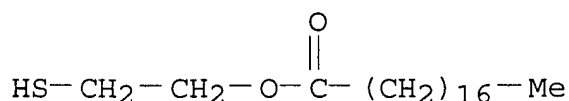


IT 27564-01-8

(heat stabilizers, contg. tin compds., for PVC)

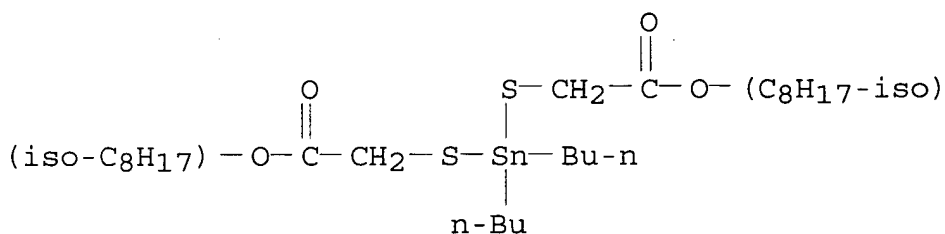
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

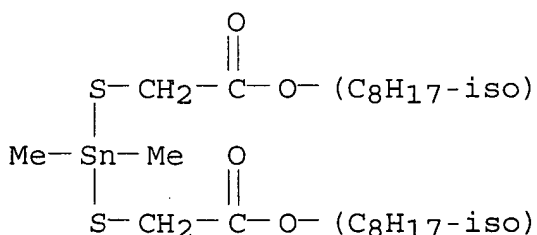


IT 26401-97-8

L21 ANSWER 27 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1979:72863 Document No. 90:72863 Heat stabilizer composition for
halogenated resins. Bohen, Joseph Michael; Toukan, Sameeh Said
(Pennwalt Corp., USA). U.S. US 4115352 19780919, 11 pp. (English).
CODEN: USXXAM. APPLICATION: US 1977-799862 19770523.
AB Mixts. of an alkali or alk. earth metal salt (prepd. from the metal
alkoxide) of a mercaptan or mercapto acid with a S-contg. organotin
or mercury compd. (and optionally an overbased org. complex of an
alk. earth metal carbonate) are synergistic heat stabilizers for PVC
[9002-86-2]. Thus, 100 parts PVC contg. 1.5 parts dibutyltin
bis(isooctyl thioglycolate) (I) [25168-24-5] and 1.5
parts barium bis(isooctyl thioglycolate) (II) [66368-81-8] [prepd.
from Ba(OMe)₂ [2914-23-0]] plus the usual processing aids and
additives had heat failure time (415.degree.) on a Brabender
plastograph 37 min, compared to 20 or 4 min for PVC contg. only I or
II, resp.
IT 25168-24-5 26636-01-1 54849-38-6
59118-76-2 65291-38-5
(heat stabilizers, contg. alkali or alk. earth mercaptides, for
PVC)
RN 25168-24-5 ZCAPLUS
CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl
ester (9CI) (CA INDEX NAME)

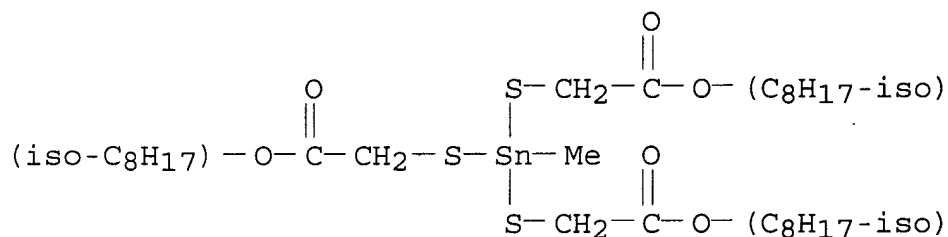


```
RN      26636-01-1      ZCAPLUS
CN      Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl
        ester (9CI)      (CA INDEX NAME)
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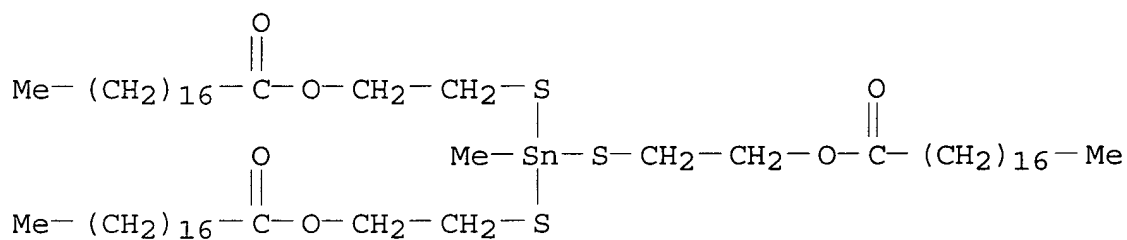
RN 54849-38-6 ZCAPLUS

CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



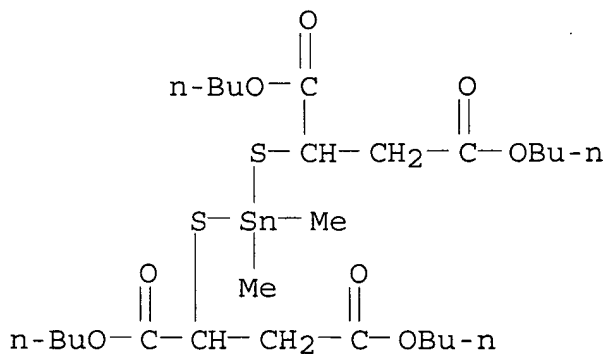
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 65291-38-5 ZCAPLUS

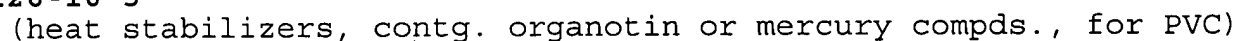
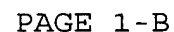
CN Butanedioic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, tetrabutyl ester (9CI) (CA INDEX NAME)



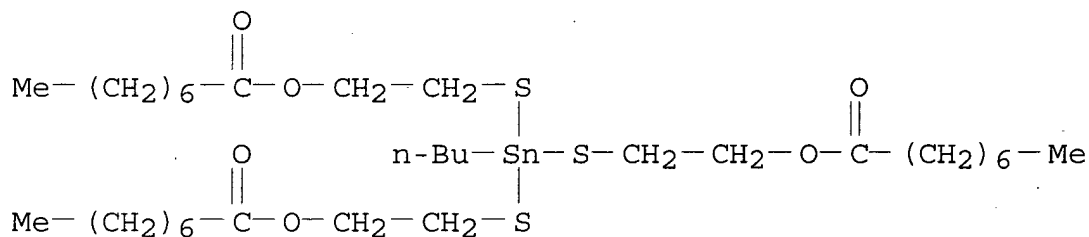
IT 59118-79-5

(heat stabilizers, contg. barium carbonate overbased org. complex and barium bis(mercaptoethyl oleate), for PVC)

PAGE 1-A

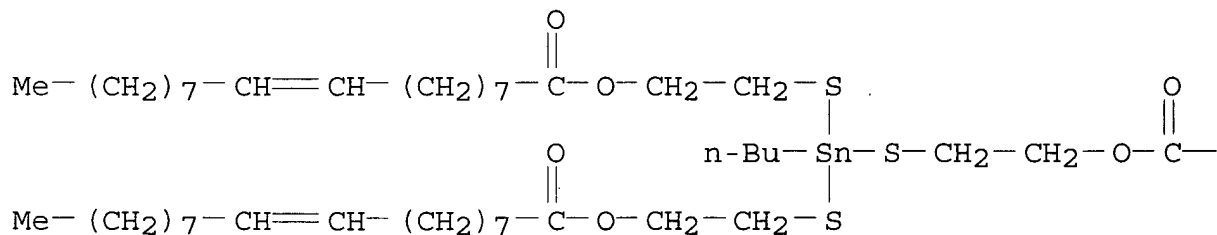


L21 ANSWER 28 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1978:509971 Document No. 89:109971 Organotin compounds. Dworkin, Robert Dally; Ejck, Adam Joseph (M and T Chemicals, Inc., USA). Ger. Offen. DE 2749082 19780511, 19 pp. (German). CODEN: GWXXBX.
 APPLICATION: DE 1977-2749082 19771102.
 AB The title compds., $R_qSn[S(CH_2)_mO_2CR_1]_4-q$ [R, R₁ = C₁-20 alkyl, cycloalkyl, aryl, aralkyl, alkaryl; m = 2, 3; q = 1-2], useful as polymer stabilizers, were prepd. Thus, 0.1 mol BuSnCl₃, 0.3 mol HSCH₂CH₂OH, and 43.3 g caprylic acid gave 93% BuSn[Sch₂CH₂O₂C(CH₂)₆Me]₃. Similarly prepd. were (Z)-BuSn[Sch₂CH₂O₂C(CH₂)₇CH:CH(CH₂)₇Me]₃ and S[SnBu(Sch₂CH₂O₂C(CH₂)₆Me)₂]₂.
 IT **59118-80-8P 67361-76-6P**
 (prepn. of)
 RN 59118-80-8 ZCAPLUS
 CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

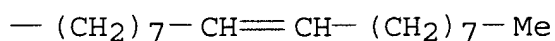


RN 67361-76-6 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



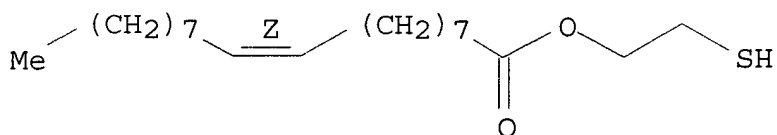
IT 59118-78-4

(reaction with alkylhalostannanes)

RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 67361-77-7

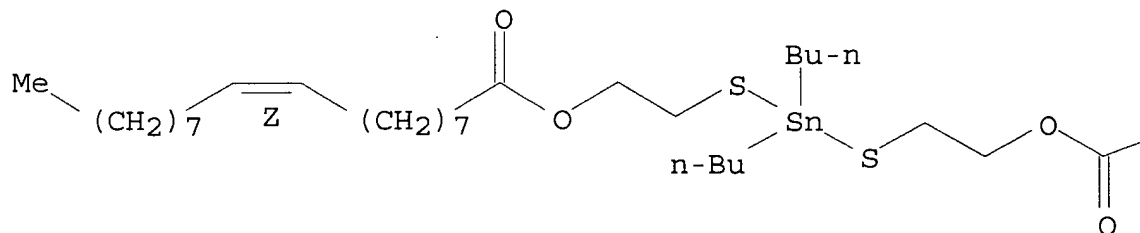
(stabilizer for polyvinylchloride)

RN 67361-77-7 ZCAPLUS

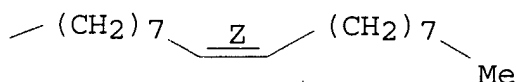
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 59118-80-8P 67361-76-6P
(prepn. of)

IT 59118-78-4
(reaction with alkylhalostannanes)

IT 67361-77-7
(stabilizer for polyvinylchloride)

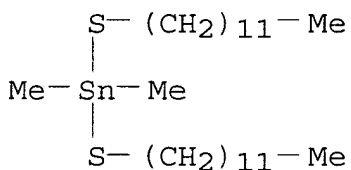
L21 ANSWER 29 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN
1976:508776 Document No. 85:108776 Organotin stabilizers for halo
resins. (Cincinnati Milacron Chemicals, Inc., USA). Jpn. Kokai
Tokkyo Koho JP 51020250 19760218 Showa, 12 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1974-92241 19740812.

AB $\text{Me}_2\text{SnR}_1\text{R}_2$ ($\text{R}_1 = \text{R}_2 = \text{C}_{12}\text{H}_{25}\text{S}$, $\text{C}_8\text{H}_{17}\text{O}_2\text{CCH:CHCO}_2$, $\text{C}_9\text{H}_{19}\text{CO}_2$; $\text{R}_1 = \text{Cl}$,
 $\text{R}_2 = \text{C}_8\text{H}_{17}\text{O}_2\text{CCH}_2\text{S}$; $\text{R}_1\text{R}_2 = \text{S}$), $(\text{Me}_2\text{SnSCH}_2\text{CO}_2\text{C}_8\text{H}_{17})_2\text{Sn}$ ($n = 1, 2$), and
 $\text{Me}_2\text{Sn}(\text{SCH}_2\text{CO}_2\text{CH}_2\text{CH}_2\text{O}_2\text{CCH}_2\text{S})_2\text{SnMe}_2$ were prepd. and used as
stabilizers for resins. Thus, 725 g Me_2SnCl_2 (contg. 0.5% Me_3SnCl)
in H_2O and 415 g 62% Na_2S in H_2O were stirred 1 hr at 24-45.degree.
to give 535 g Me_2SnS .

IT 51287-84-4P
(prepn. of, for stabilizers for resins)

RN 51287-84-4 ZCAPLUS

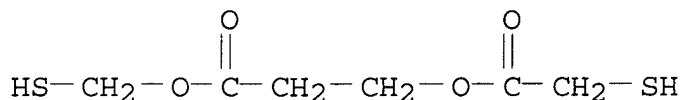
CN Stannane, bis(dodecylthio)dimethyl- (9CI) (CA INDEX NAME)



IT 60388-45-6
(reaction of, with dichlorodimethylstannane)

RN 60388-45-6 ZCAPLUS

CN Propanoic acid, 3-[(mercaptoacetyl)oxy]-, mercaptomethyl ester (9CI)
(CA INDEX NAME)



IT 51287-84-4P

(prepn. of, for stabilizers for resins)

IT 60388-45-6

(reaction of, with dichlorodimethylstannane)

L21 ANSWER 30 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:479039 Document No. 85:79039 Sulfur-containing organotin compounds. Kugele, Thomas G.; Koeniger, Arthur F. (Cincinnati Malacron Chemicals, Inc., USA). Ger. Offen. DE 2550507 19760520, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2550507 19751111.

AB Compds. (23) such as (ROCH₂CH₂S)₂SnMeR₁SnMe(SCH₂CH₂OR)₂ (I) with R = octanoyl, oleoly, or octadecyl and R₁ = SCH₂CH₂O₂C(CH₂)₄CO₂CH₂CH₂S, SCH₂CH₂O₂CCH₂CH₂S, O₂CCH:CHCO₂ (cis), SCH₂CH₂S, or similar group were prepd. for use as heat stabilizers in PVC [9002-86-2]. Thus, 0.5 mole MeSnCl₃ [993-16-8] in water was treated with 1 mole HSCH₂CH₂O₂C(CH₂)₇H [57813-59-9], aq. NaOH, 0.25 mole bis(2-mercaptoethyl) adipate [15196-22-2], and aq NaOH to prepare I (R = octanoyl, R₁ = SCH₂CH₂O₂C(CH₂)₄CO₂CH₂CH₂S) (II) [59970-58-0]. PVC contg. II had better heat stability than PVC contg. the organotin isooctyl thioglycolate.

IT 59970-53-5 59970-56-8 59970-57-9

59970-58-0 59970-60-4 59970-61-5

59970-62-6 59970-63-7 59970-64-8

59970-65-9 59970-66-0 59970-67-1

59970-68-2 59970-69-3 59970-70-6

60003-88-5

(heat stabilizers, for PVC)

RN 59970-53-5 ZCAPLUS

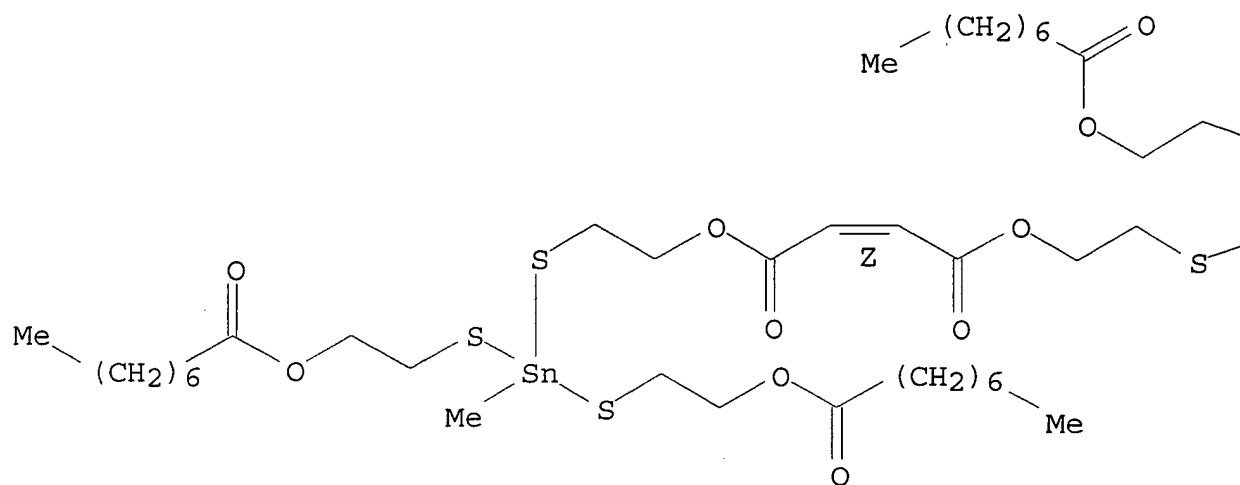
CN Octanoic acid, 4,9-dimethyl-6-oxo-4,9-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-5-oxa-3,10-dithia-4,9-distannadodecane-1,12-diyl ester (9CI) (CA INDEX NAME)

$$\begin{array}{c}
 \text{O} \\
 \parallel \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 | \\
 \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{C}-\text{O} \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \qquad \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}- \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O}
 \end{array}$$
$$-(\text{CH}_2)_6-\text{Me}$$

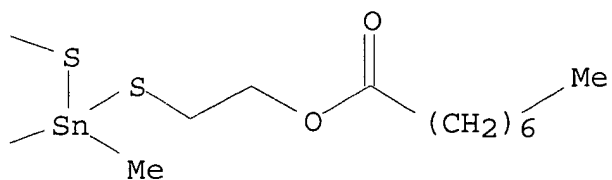
CN 2-Butenedioic acid (2Z)-, bis[4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl] ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



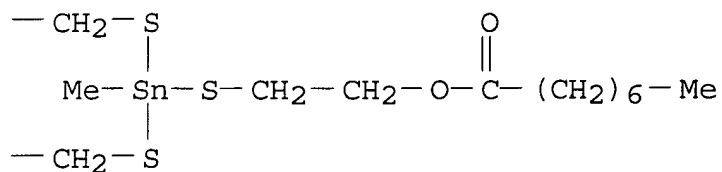
RN 59970-57-9 ZCAPLUS
 CN 9-Oxa-4,6-dithia-5-stannaheptadecanoic acid, 5-methyl-10-oxo-5-[[2-
 [(1-oxooctyl)oxy]ethyl]thio]-, 4-methyl-9-oxo-4-[[2-[(1-
 oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stanna-hexadec-1-yl ester
 (9CI) (CA INDEX NAME)

[illegible]
$$-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}{\text{C}}-(\text{CH}_2)_6-\text{Me}$$

RN	59970-58-0	ZCAPLUS
CN	Hexanedioic acid, bis[4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl] ester (9CI) (CA INDEX NAME)	

$$\begin{array}{c}
 \text{O} \\
 || \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 | \\
 \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}-(\text{CH}_2)_4-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2- \\
 | \\
 \text{O} \\
 || \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S}
 \end{array}$$

PAGE 1-B

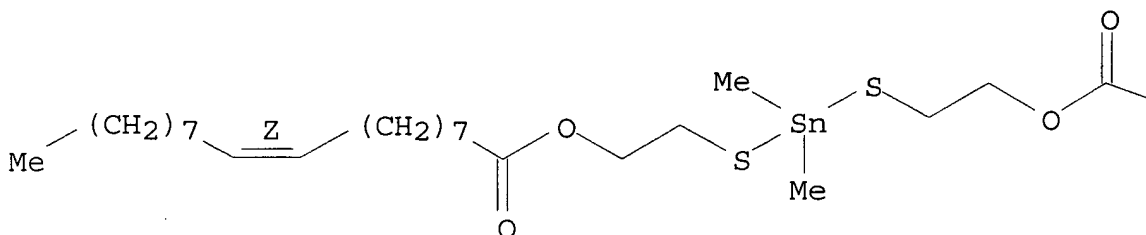


RN 59970-60-4 ZCAPLUS

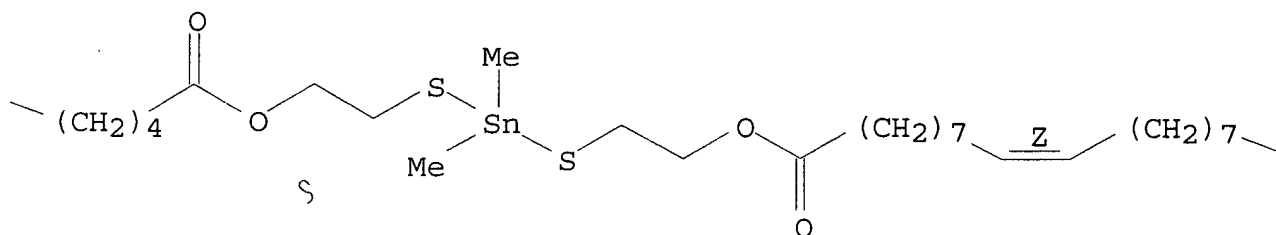
CN Hexanedioic acid, bis(4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl) ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



PAGE 1-C

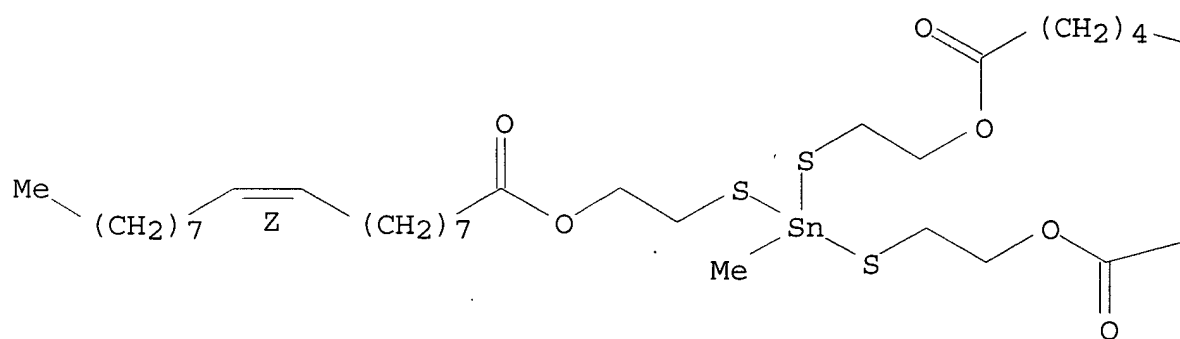
Me

RN 59970-61-5 ZCAPLUS

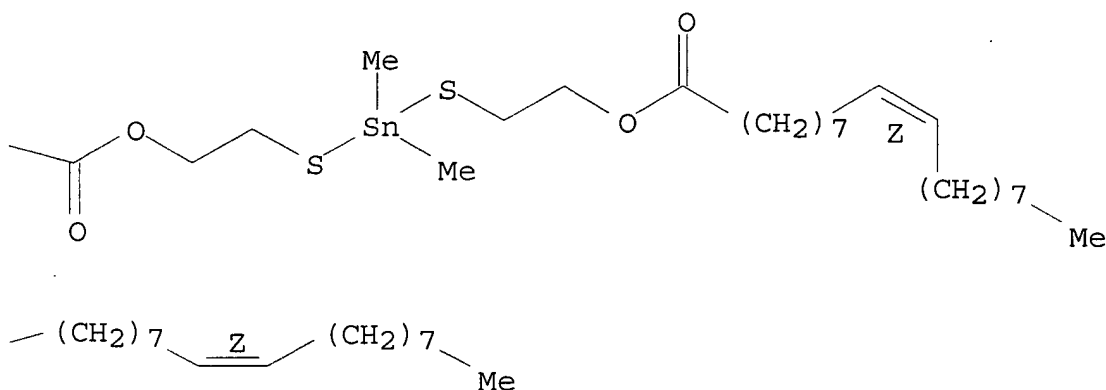
CN Hexanedioic acid, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl 4-methyl-9-oxo-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z) - (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



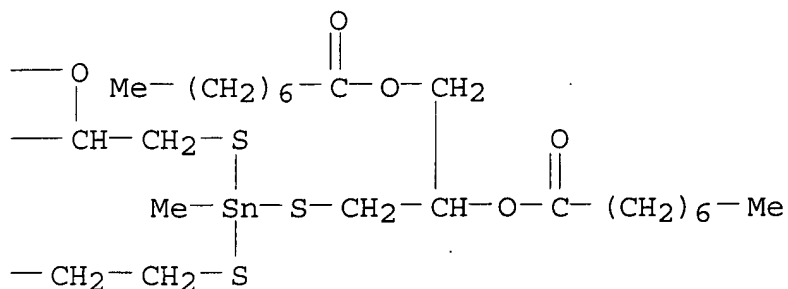
PAGE 1-B



RN 59970-62-6 ZCAPLUS

CN Hexanedioic acid, bis[4-methyl-4-[[2-(octadecyloxy)ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-1-yl] ester (9CI) (CA INDEX NAME)

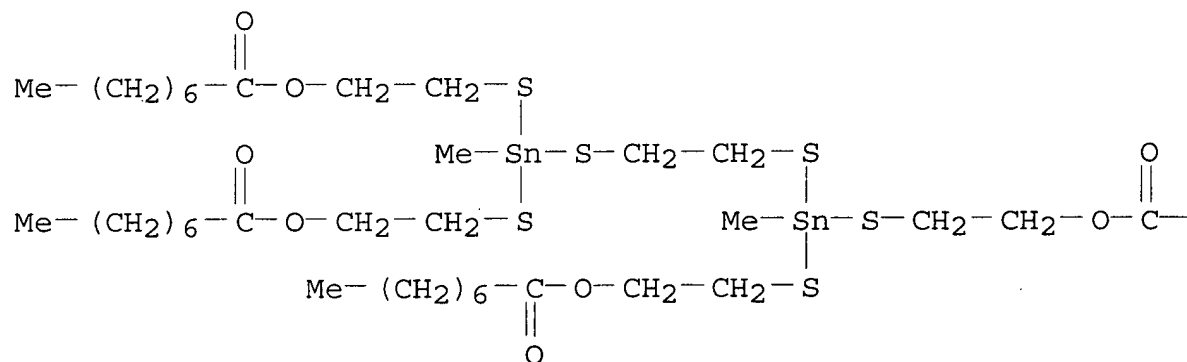
PAGE 1-B



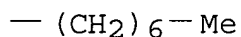
RN 59970-64-8 ZCAPLUS

CN Octanoic acid, 4,9-dimethyl-4,9-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,8,10-tetrathia-4,9-distannadodecane-1,12-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



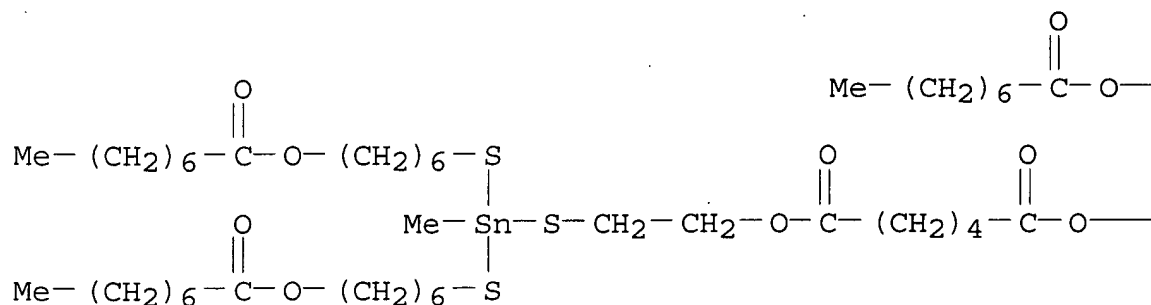
PAGE 1-B



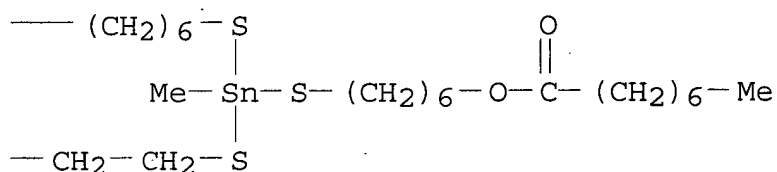
RN 59970-65-9 ZCAPLUS

CN Hexanedioic acid, bis[4-methyl-13-oxo-4-[[6-[(1-oxooctyl)oxy]hexyl]thio]-12-oxa-3,5-dithia-4-stannaeicos-1-yl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

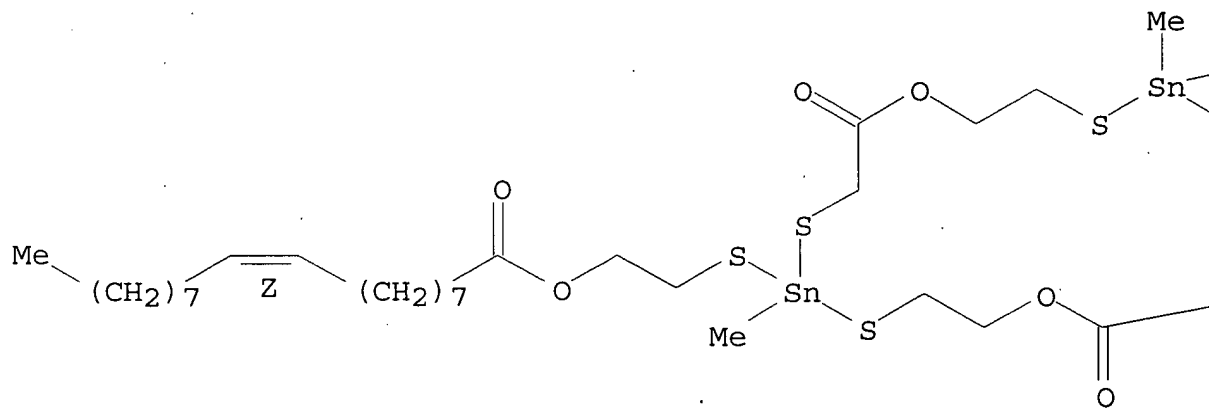


RN 59970-66-0 ZCAPLUS

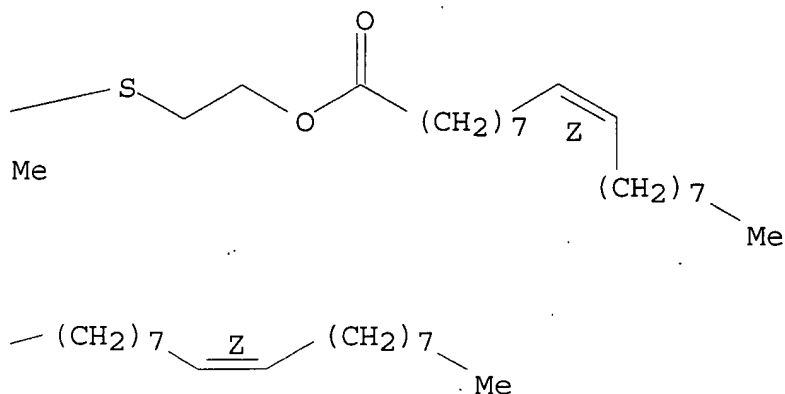
CN 8-Oxa-3,5-dithia-4-stannahehexacos-17-enoic acid, 4-methyl-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahehexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

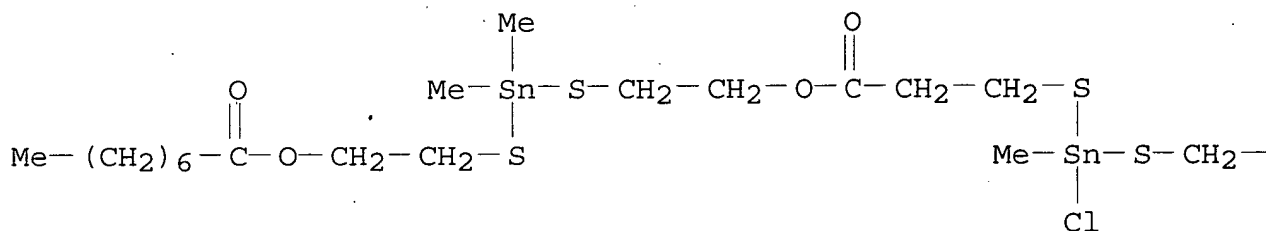


PAGE 1-B

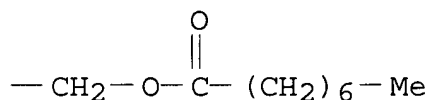


RN 59970-67-1 ZCAPLUS
 CN 9-Oxa-4,6-dithia-5-stannaheptadecanoic acid, 5-chloro-5-methyl-10-oxo-, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexadec-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 59970-68-2 ZCAPLUS
 CN Hexanedioic acid, bis[4-butyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl] ester (9CI) (CA INDEX NAME)

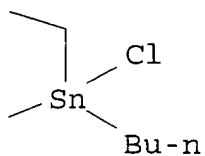
$$\begin{array}{c} \text{O} \\ \parallel \\ \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\ \parallel \\ \text{O} \\ \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array} \quad \begin{array}{c} \text{O} \\ \parallel \\ \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2- \\ \parallel \\ \text{O} \\ \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2- \end{array} \quad \begin{array}{c} \text{O} \\ \parallel \\ \text{O}-\text{C}-(\text{CH}_2)_4-\text{C}-\text{O}-\text{CH}_2- \\ \parallel \\ \text{O} \\ \text{O}-\text{C}-(\text{CH}_2)_4-\text{C}-\text{O}-\text{CH}_2- \end{array}$$
$$\begin{array}{c} \text{---CH}_2\text{---S} \\ | \\ \text{n-Bu---Sn---S---CH}_2\text{---CH}_2\text{---O---C(=O)---(CH}_2\text{)}_6\text{---Me} \\ | \\ \text{---CH}_2\text{---S} \end{array}$$

CN 2-Butenedioic acid (2Z)-; 4-butyl-4-chloro-9-oxo-8-oxa-3,5-dithia-4-stannahexadec-1-yl 4-butyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

CCCCCCCCC(=O)OCCSC[Sn](CCCC)S(CCCOC(=O)C=CC(=O)OCCSC)CCCCCCCCC(=O)OCCSC

PAGE 1-B

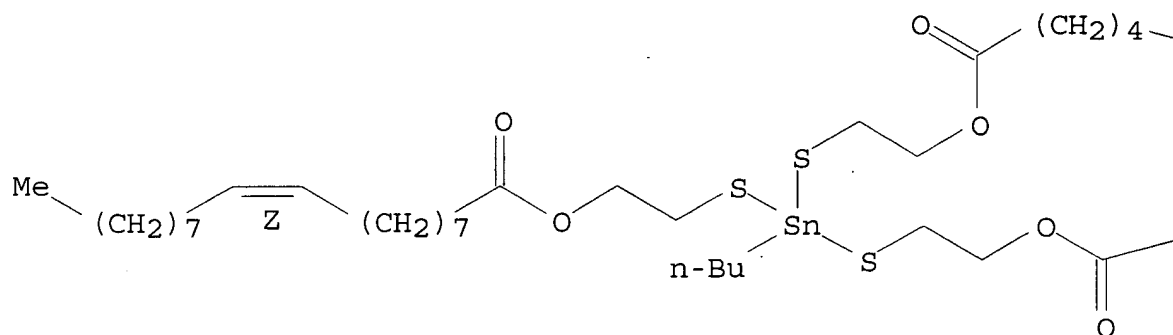


RN 59970-70-6 ZCAPLUS

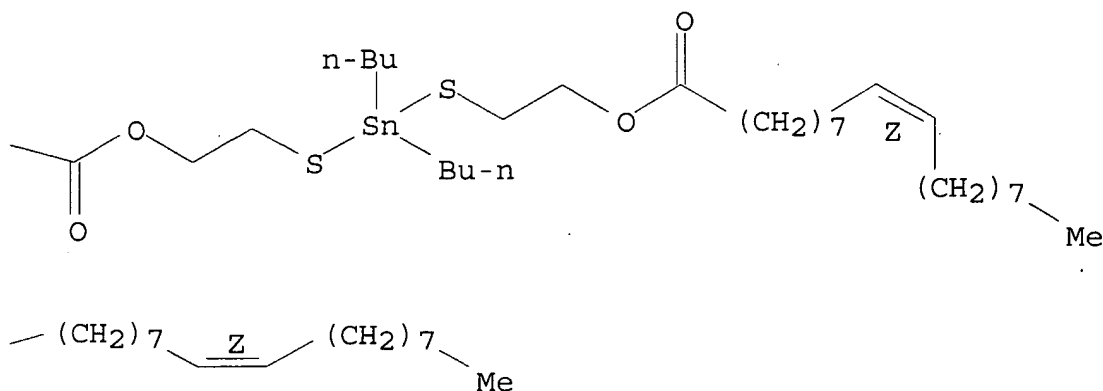
CN Hexanedioic acid, 4-butyl-9-oxo-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl 4,4-dibutyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

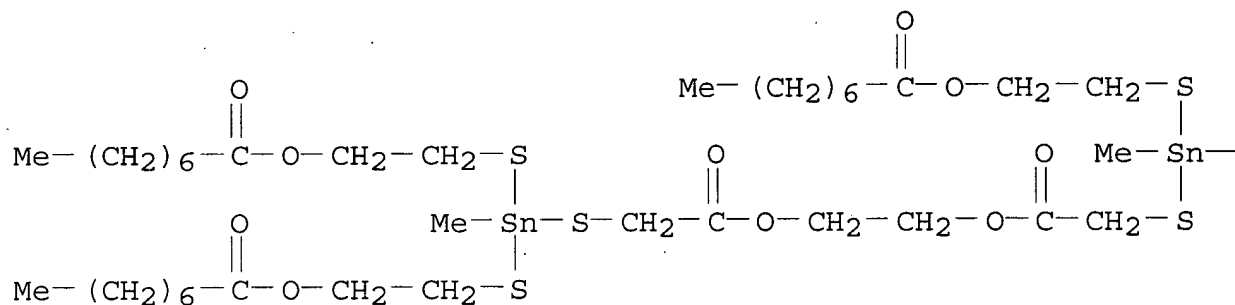


PAGE 1-B

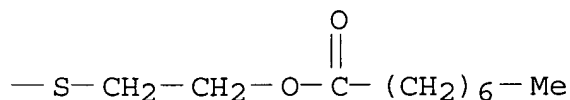


RN 60003-88-5 ZCAPLUS
 CN 8-Oxa-3,5-dithia-4-stannaheptadecanoic acid, 4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-, 1,2-ethanediyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

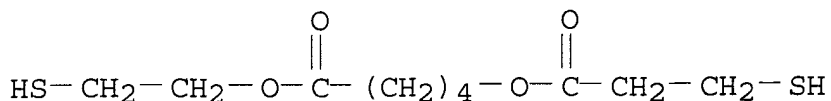


IT 15196-22-2 28772-22-7 38705-47-4
 57813-59-9 59118-78-4 59119-10-7
 59970-59-1

(reaction of, with organotin chlorides)

RN 15196-22-2 ZCAPLUS
 CN Pentanoic acid, 5-(3-mercapto-1-oxopropoxy)-, 2-mercaptoethyl ester

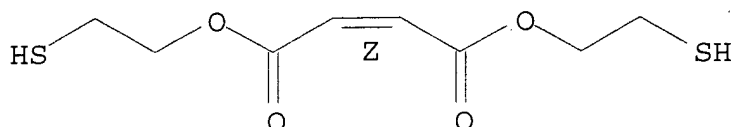
(9CI) (CA INDEX NAME)



RN 28772-22-7 ZCAPLUS

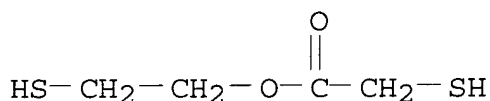
CN 2-Butenedioic acid (2Z)-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



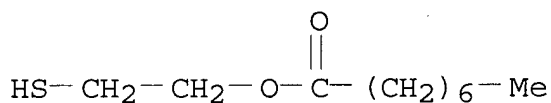
RN 38705-47-4 ZCAPLUS

CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

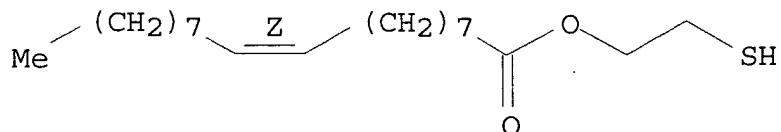
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

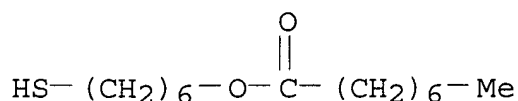
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



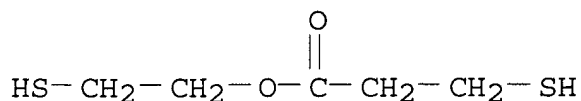
RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



RN 59970-59-1 ZCAPLUS

CN Propanoic acid, 3-mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 59970-53-5 59970-56-8 59970-57-9
 59970-58-0 59970-60-4 59970-61-5
 59970-62-6 59970-63-7 59970-64-8
 59970-65-9 59970-66-0 59970-67-1
 59970-68-2 59970-69-3 59970-70-6
 60003-88-5

(heat stabilizers, for PVC)

IT 15196-22-2 28772-22-7 38705-47-4
 57813-59-9 59118-78-4 59119-10-7
 59970-59-1

(reaction of, with organotin chlorides)

L21 ANSWER 31 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:181132 Document No. 84:181132 Organotin compounds and their use as stabilizers. Kugele, Thomas G. (Cincinnati Milacron, Inc., USA). Ger. Offen. DE 2531308 19760205, 81 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2531308 19750712.

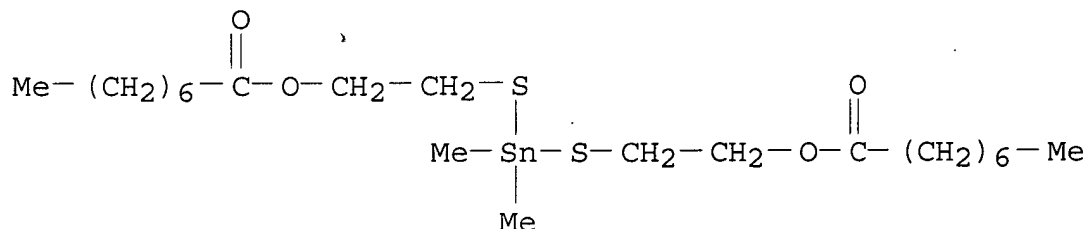
AB Esters of alkyl[(hydroxyalkyl)thio]tin compds. contg. 1-2 C1-20 hydrocarbyl groups or their sulfides are heat stabilizers for PVC [9002-86-2] with improved storage stability. Thus, adding 40 g 50% NaOH dropwise to 110 g Me₂SnCl₂ [753-73-1] and 109 g C₈H₁₇CO₂CH₂CH₂SH [30982-97-9] stirred in 200 ml H₂O at 30-40.degree., stirring 1 hr, adding 32.5 g 60% Na₂S [1313-82-2] dropwise at 25-35.degree., and stirring 1 hr at 35.degree. gives 95.5% (C₈H₁₇CO₂CH₂CH₂SSnMe₂)₂S (I) [59119-13-0]. Compounded PVC (Geon 103EP) contg. I equiv. to 150 mg Sn/100 g has color (10 = colorless, 5 = orange-brown, 0 = blackened) >9, >7, 6, 5, 4, 3, and 2 after being calendered 1, 4, 6, 7, 8, 9, and 10 min, resp., at 193.degree..

IT 57813-60-2 57813-62-4 59118-76-2
 59118-77-3 59118-79-5 59118-80-8
 59118-81-9 59118-82-0 59118-85-3
 59118-96-6 59138-44-2 59158-80-4

(heat stabilizers, for PVC)

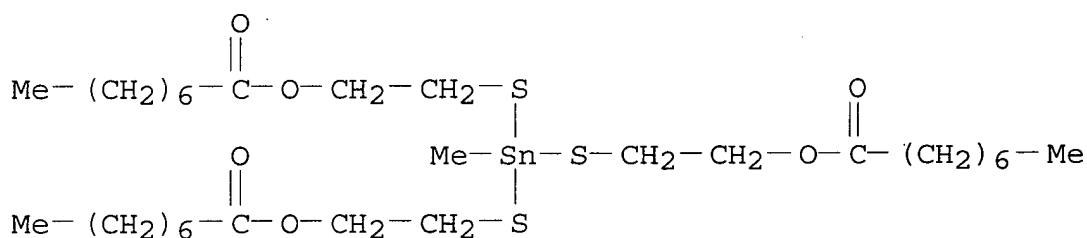
RN 57813-60-2 ZCAPLUS

CN Octanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



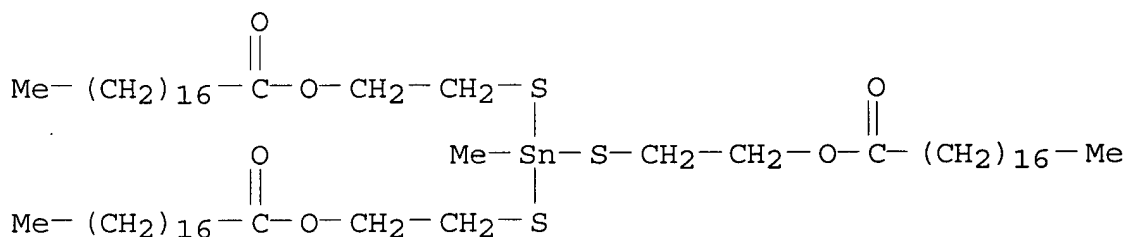
RN 57813-62-4 ZCAPLUS

CN Octanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



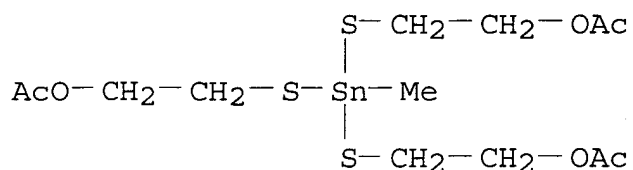
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



RN 59118-77-3 ZCAPLUS

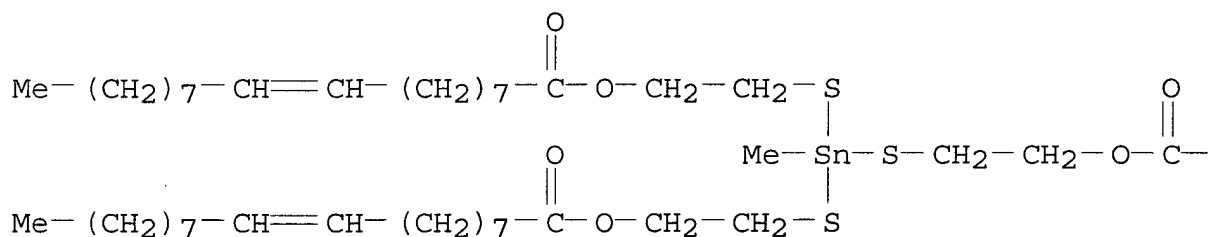
CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triacetate
(9CI) (CA INDEX NAME)



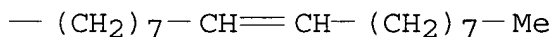
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

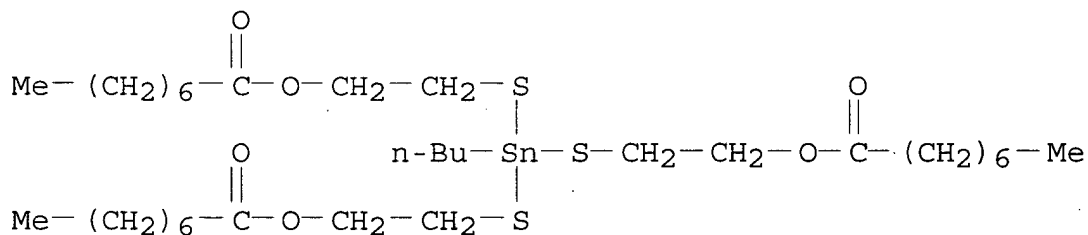


PAGE 1-B



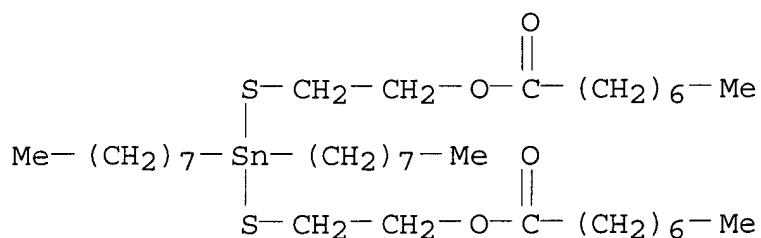
RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

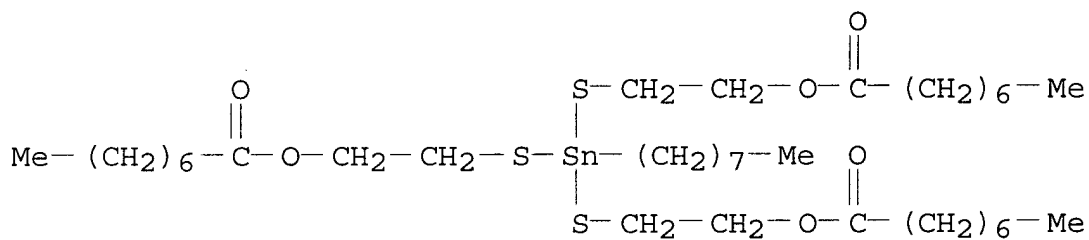


RN 59118-81-9 ZCAPLUS

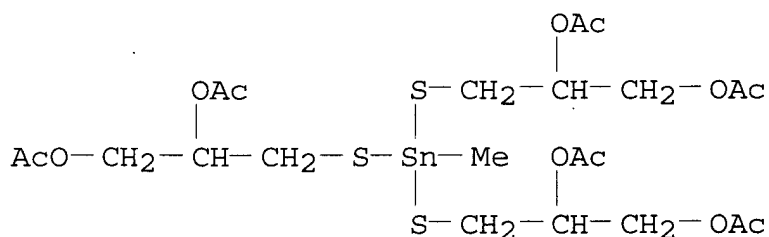
CN Octanoic acid, (dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59118-82-0 ZCAPLUS

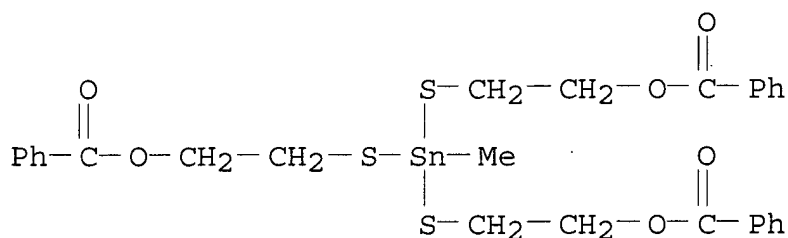
CN Octanoic acid, (octylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

RN 59118-85-3 ZCAPLUS

CN 3-Oxa-7,9-dithia-8-stannadodecane-5,11,12-triol,
8-[3-(acetyloxy)propyl]thio]-8-methyl-2-oxo-, triacetate (9CI) (CA
INDEX NAME)

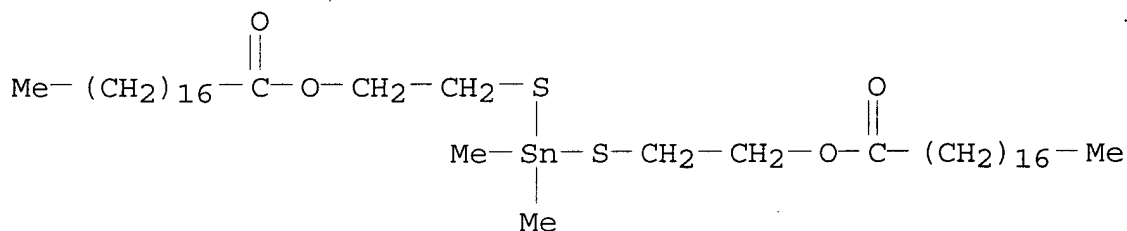
RN 59118-96-6 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, tribenzoate
(9CI) (CA INDEX NAME)



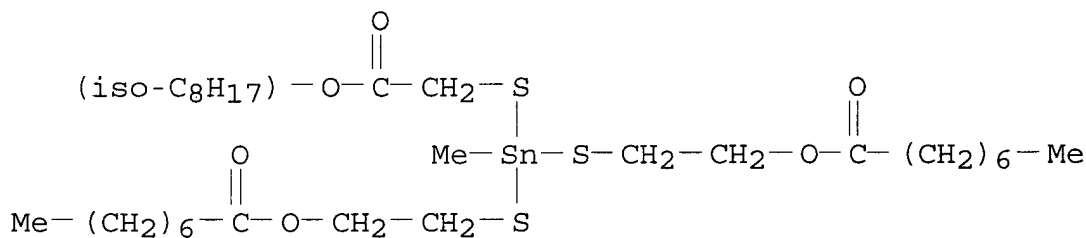
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59158-80-4 ZCAPLUS

CN Octanoic acid, [[[2-(isooctyloxy)-2-oxoethyl]thio]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 27564-01-8 30982-97-9

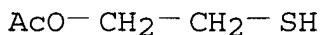
50627-04-8 57813-59-9 59118-78-4

59118-94-4 59119-06-1 59119-10-7

(reaction of, with chlorostannanes)

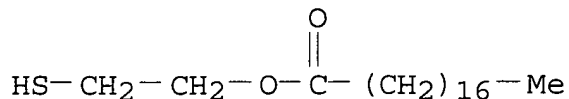
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



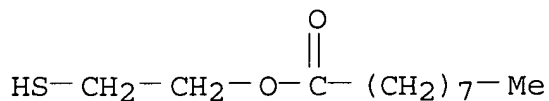
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



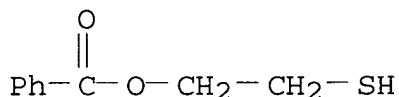
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



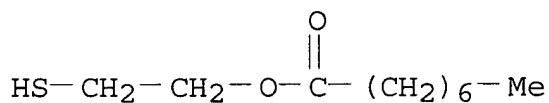
RN 50627-04-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-benzoate (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

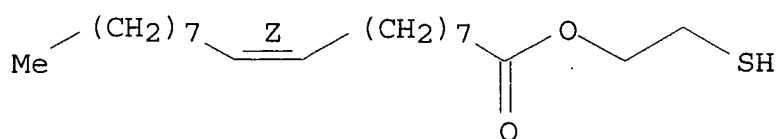
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

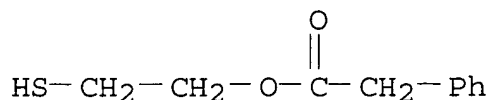
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



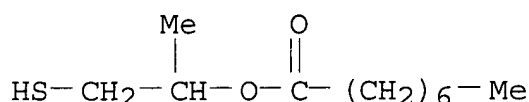
RN 59118-94-4 ZCAPLUS

CN Benzeneacetic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



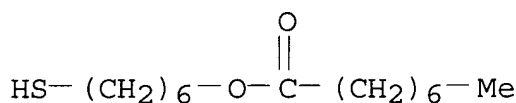
RN 59119-06-1 ZCAPLUS

CN Octanoic acid, 2-mercapto-1-methylethyl ester (9CI) (CA INDEX NAME)



RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



IT 57813-60-2 57813-62-4 59118-76-2
 59118-77-3 59118-79-5 59118-80-8
 59118-81-9 59118-82-0 59118-85-3
 59118-96-6 59138-44-2 59158-80-4

(heat stabilizers, for PVC)

IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7

(reaction of, with chlorostannanes)

L21 ANSWER 32 OF 32 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:44363 Document No. 84:44363 Organotin mercaptides. Molt, Kenneth R. (Cincinnati Milacron Chemicals, Inc., USA). Ger. Offen. DE 2503554 19750911, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2503554 19750129.

AB Approx. 20 methyltin thioethers, e.g., [(C₈H₁₇O₂CCH₂S)₂SnMe]₂S, MeSn(SCH₂CO₂C₈H₁₇)₃, [(C₇H₁₅CO₂CH₂CH₂S)₂SnMe]₂S, Me₂Sn(SCH₂Ph)SCH₂CO₂C₈H₁₇, etc. were prep'd. E.g., Me₂SnCl₂ and Na₂S gave Me₂SnS, which, with ClCH₂CH₂O₂CC₇H₁₅, gave Me₂SnClSCH₂CH₂O₂CC₇H₁₅. This treated with HSCH₂CH₂O₂CC₇H₁₅ gave Me₂Sn(SCH₂CH₂O₂CC₇H₁₅)₂. The methyltin thioethers were stabilizers for polyvinyl chloride.

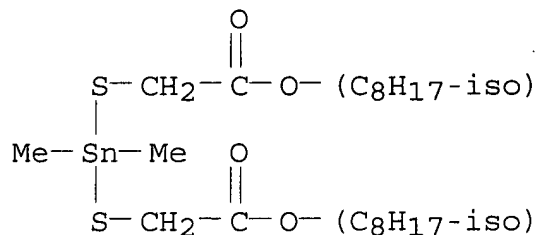
IT 26636-01-1P 53040-42-9P 57807-85-9P
 57807-86-0P 57813-59-9P 57813-60-2P
 57813-62-4P

(prepn. of)

RN 26636-01-1 ZCAPLUS

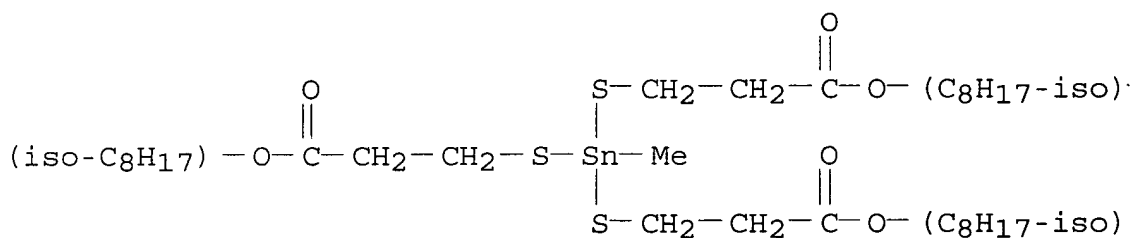
CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl

ester (9CI) (CA INDEX NAME)



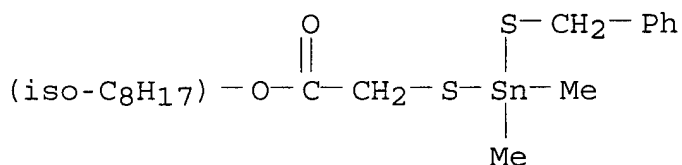
RN 53040-42-9 ZCAPLUS

CN Propanoic acid, 3,3',3''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



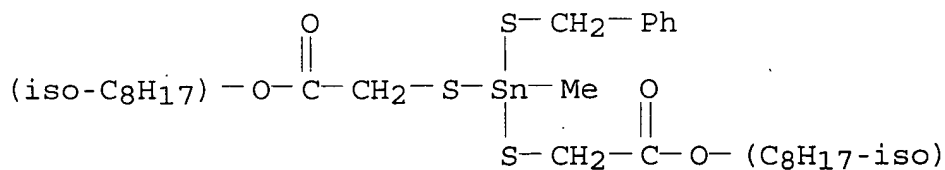
RN 57807-85-9 ZCAPLUS

CN Acetic acid, [[dimethyl[(phenylmethyl)thio]stannyl]thio]-, isooctyl ester (9CI) (CA INDEX NAME)



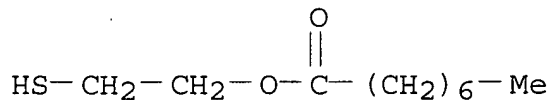
RN 57807-86-0 ZCAPLUS

CN Acetic acid, 2,2'-[[methyl[(phenylmethyl)thio]stannylene]bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



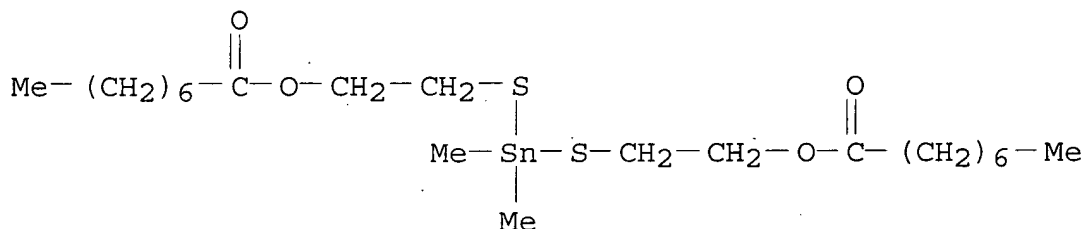
RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



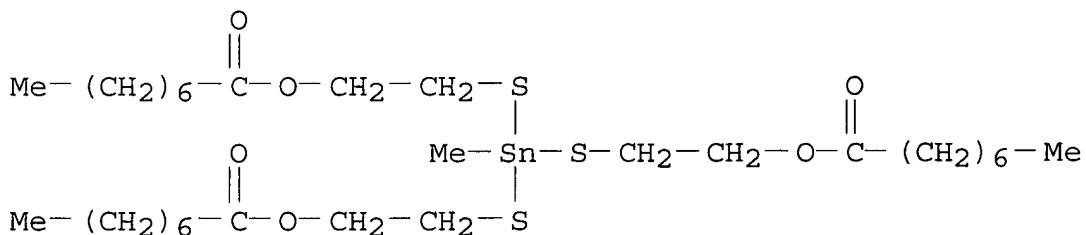
RN 57813-60-2 ZCAPLUS

CN Octanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 57813-62-4 ZCAPLUS

CN Octanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

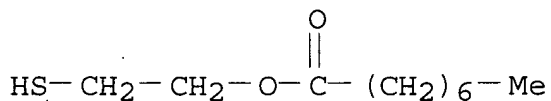


IT 57813-59-9

(reaction with tin chlorides)

RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 26636-01-1P 53040-42-9P 57807-85-9P

57807-86-0P 57813-59-9P 57813-60-2P

57813-62-4P

=> d 126 1-30 cbib abs hitstr hitrn

L26 ANSWER 1 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

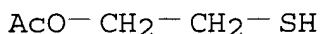
1997:611060 Document No. 127:293322 DSC study of the reaction of tert-butyl hydroperoxide with thioorganostannic derivatives. Bevilacqua, M.; Pereyre, M.; Maillard, B. (Lab. de Chim. Organique et Organometallique, URA 35 CNRS, Univ. Bordeaux I, Talence, 33405, Fr.). *Thermochimica Acta*, 297(1-2), 151-160 (French) 1997. CODEN: THACAS. ISSN: 0040-6031. Publisher: Elsevier.

AB The decompn. of tBuOOH in di-Bu phthalate by 16 thioorganostannic derivs. (Bu₂Sn(SR)₂ (R = CH₂CO₂Me, Bu, CH₂CH₂CO₂CH₂Et (C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇); R₁Sn(S)SBu (R₁ = Bu, C₈H₁₇); BuSn(S)SR₂ (R₂ = CH₂CH₂CO₂CH₂Et (C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇, C₁₂H₂₅); Bu₃SnSCH₂CO₂C₁₈H₃₇; BuSn(SCH₂CO₂C₁₈H₃₇)₃; Sn(SCH₂CO₂C₁₈H₃₇)₄; Bu₃SnSSnBu₃; (Bu₂SnS)₃), some of which are known stabilizers of polyolefins, was studied by temp. programmed DSC. The degrdn. involves various successive reactions and certain produced thioorganostannic compds. are capable of catalyzing the decompn. of tBuOOH.

IT 5862-40-8, 2-Mercaptoethyl acetate
(for prepn. of thioorganostannic derivs.)

RN 5862-40-8 ZCAPLUS

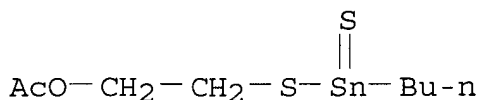
CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



IT 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane
(prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

RN 196940-49-5 ZCAPLUS

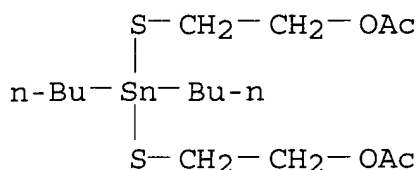
CN Ethanol, 2-[(butylthioxostannyl)thio]-, acetate (9CI) (CA INDEX NAME)



IT 67874-47-9P, Bis(2-acetoxyethylthio)dibutylstannane
(prepn. and reaction; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

RN 67874-47-9 ZCAPLUS

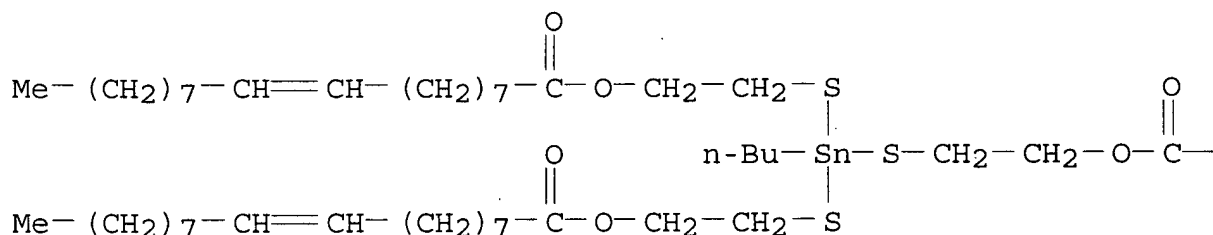
CN 8-Oxa-3,5-dithia-4-stannadecan-1-ol, 4,4-dibutyl-9-oxo-, acetate (9CI) (CA INDEX NAME)



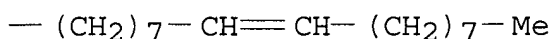
- IT 5862-40-8, 2-Mercaptoethyl acetate
(for prepn. of thioorganostannic derivs.)
- IT 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane
(prepn. and reaction of polymeric; DSC study of reaction of
tert-Bu hydroperoxide with thioorganostannic derivs.)
- IT 67874-47-9P, Bis(2-acetoxyethylthio)dibutylstannane
(prepn. and reaction; DSC study of reaction of tert-Bu
hydroperoxide with thioorganostannic derivs.)

- L26 ANSWER 2 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1995:205921 Document No. 122:32993 Organotin stabilizer mixture.
Anderson, Donald F.; Walter, Steven (Akzo Nobel N.V., Neth.). U.S.
US 5354508 A 19941011, 4 pp. (English). CODEN: USXXAM.
APPLICATION: US 1993-160534 19931201.
- AB An organotin stabilizer mixt. comprising: (a) monoalkyltin
mercaptoalc. $\text{RSn}(\text{SR}'\text{OH})_3$, wherein R is lower alkyl and R' is lower
alkylene (b) a monoalkyltin mercaptoacid ester $\text{RSn}(\text{SR}'\text{CO}_2\text{R}'')_3$, where
R is lower alkyl, R' is lower alkylene, and R'' is C6 to C10 alkyl;
and (c) a monoalkyltin sulfide provides improved early color,
lubricity, and weatherability to rigid vinyl polymer formulations.
The formulation may also contain a monoalkyltin mercaptoalc. ester
as an optional component.
- IT 67361-76-6P
(organotin stabilizer mixt.)
- RN 67361-76-6 ZCAPLUS
- CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-
ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

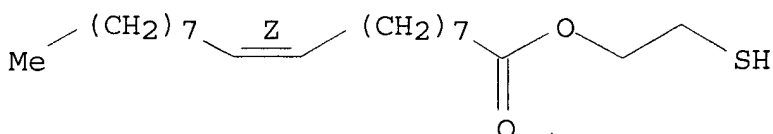


PAGE 1-B



IT 59118-78-4, 2-Mercaptoethyl oleate
 (organotin stabilizer mixt.)
 RN 59118-78-4 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

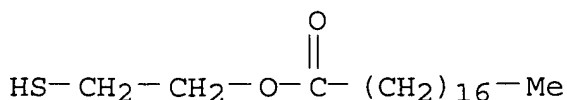


IT 67361-76-6P
 (organotin stabilizer mixt.)
 IT 59118-78-4, 2-Mercaptoethyl oleate
 (organotin stabilizer mixt.)

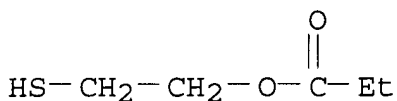
L26 ANSWER 3 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1993:125812 Document No. 118:125812 Heat- and discoloration-resistant chlorinated PVC compositions. Oomoto, Masanobu; Kawamoto, Kazuo; Kakei, Hiroshi (Sekisui Chemical Co., Ltd., Japan; Tokuyama Soda Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 04198348 A2 19920717 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-327331 19901127.

AB The title compns. comprise chlorinated PVC contg. 0.05-5 phr alkyltin compds. and 0.05-5 phr S- and/or Cl-contg. alkyltin compds. and/or metal halides. Thus, a molding prepd. by molding HA 15F contg. MBS (Metablen C 150S) 10, Hiwax 4202E, dioctyltin sulfide 2, and monoctyltin(isooctylmercaptoacetate) chloride (I) 1 phr at 180.degree. for 7 min had yellowness 33, vs. 43 without I.

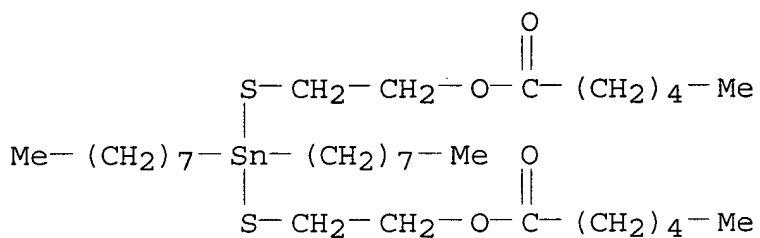
IT 27564-01-8, 2-Mercaptoethylstearate 70892-79-4
 (chlorinated PVC contg. alkyltin compds. and, heat-resistant)
 RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



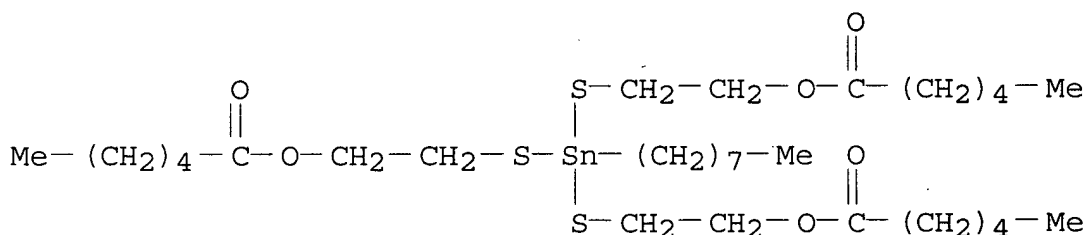
RN 70892-79-4 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-propanoate (9CI) (CA INDEX NAME)



IT 145821-67-6 145821-68-7 145821-70-1
 145821-73-4 145850-34-6
 (heat stabilizers, for chlorinated PVC)
 RN 145821-67-6 ZCAPLUS
 CN Hexanoic acid, (dioctylstannylene)bis(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



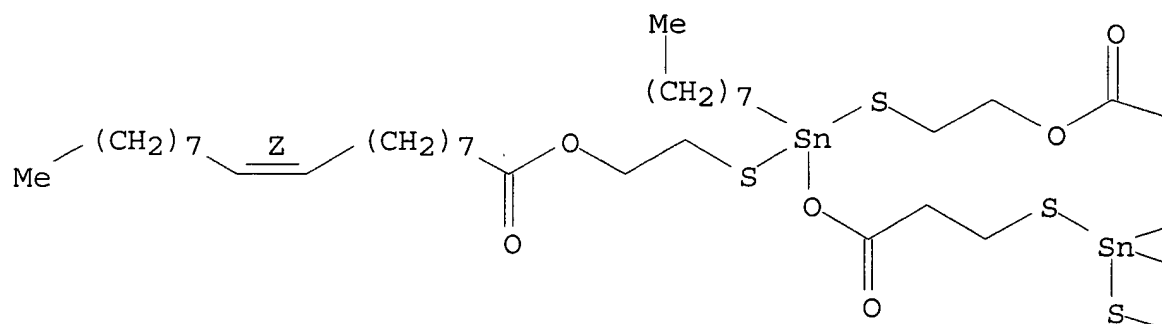
RN 145821-68-7 ZCAPLUS
 CN Hexanoic acid, (octylstannylidyne)tris(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



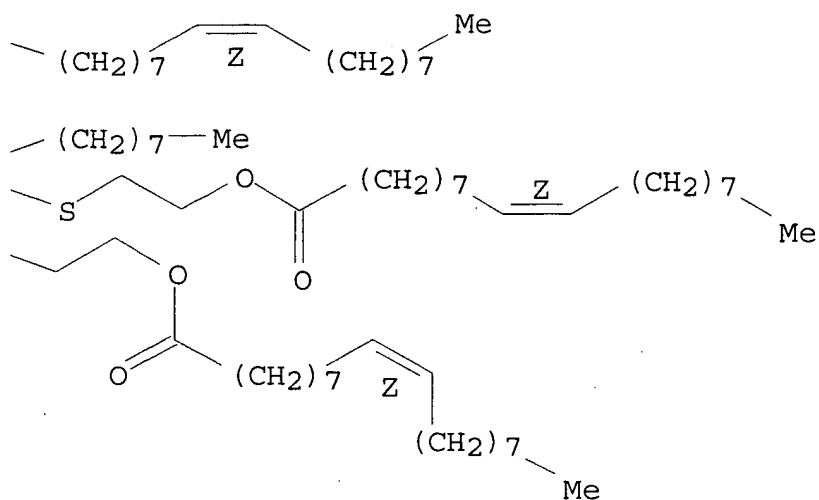
RN 145821-70-1 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 4,10-dioctyl-6-oxo-4,10-bis[[2-[[[(9Z)-1-oxo-9-octadecenyl]oxy]ethyl]thio]-5-oxa-3,9,11-trithia-4,10-distannatridecane-1,13-diyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



RN 145821-73-4 ZCAPLUS
 CN Hexanedioic acid, bis[2-[(didodecyloctylstannyl)thio]ethyl] ester
 (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{Me}-(\text{CH}_2)_{11}-\text{Sn}-(\text{CH}_2)_{11}-\text{Me} \\ | \\ (\text{CH}_2)_7-\text{Me} \end{array} \quad \begin{array}{c} \text{O} \\ || \\ \text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}-(\text{CH}_2)_4-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array} \quad \begin{array}{c} \text{O} \\ || \\ (\text{CH}_2)_7-\text{Me} \\ | \\ \text{Sn}-(\text{CH}_2)_{11}-\text{Me} \end{array}$$

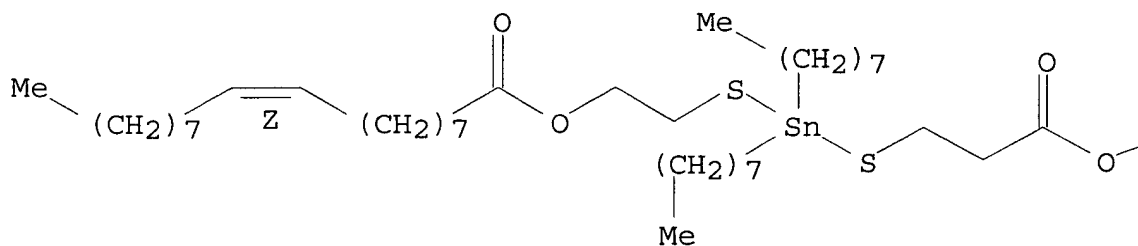
PAGE 1-B

$$-(\text{CH}_2)_{11}-\text{Me}$$

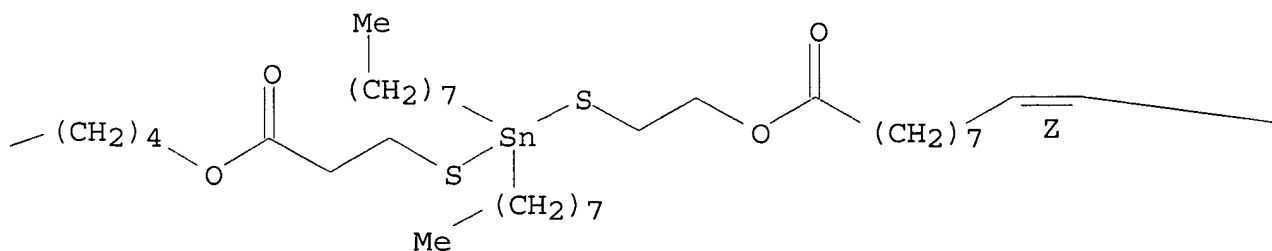
CN	9-Oxa-4,6-dithia-5-stannaheptacos-18-enoic acid, 5,5-dioctyl-10-oxo-, 1,4-butanediyl ester, (Z,Z)- (9CI) (CA INDEX NAME)
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Double bond geometry as shown.

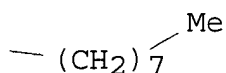
PAGE 1-A



PAGE 1-B



PAGE 1-C



IT 27564-01-8, 2-Mercaptoethylstearate 70892-79-4
(chlorinated PVC contg. alkyltin compds. and, heat-resistant)

IT 145821-67-6 145821-68-7 145821-70-1
145821-73-4 145850-34-6
(heat stabilizers, for chlorinated PVC)

L26 ANSWER 4 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1991:633771 Document No. 115:233771 Stabilized chlorinated vinyl
chloride resin compositions. Kitano, Yoshikazu; Izawa, Takeshi;
Yano, Kimiharu; Matsumaru, Toyonori (Nitto Chemical Industry Co.,
Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 03054245 A2 19910308
Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1989-189839 19890721.

AB The compns., with reduced initial coloring, contain 0.01-5 phr
organotin maleate(s) selected from $\text{RaSn}(\text{O}_2\text{CCH:CHCO}_2\text{R}_1)_4\text{-a}$,
 $(\text{SnR}_2\text{O}_2\text{CCH:CHCO}_2)_m$, and $\text{A}[\text{SnRa}(\text{O}_2\text{CCH:CHCO}_2\text{R}_1)_3\text{-a}]_2$ ($\text{R} = \text{C}_1\text{-18 alkyl}$,
 $\text{C}_1\text{-12 alkoxy carbonyl ethyl}$; $\text{R}_1 = \text{C}_1\text{-22 alkyl}$, alkenyl , aralkyl ,
 alkoxy alkyl , cycloalkyl ; $\text{A} = \text{O}$, $\text{O}_2\text{CCH:CHCO}_2$; $\text{a} = 1, 2$; $\text{m} = 2\text{-10}$) and
0.01-3 phr RSnXYZ and/or MX_1 [$\text{X} = \text{Cl, Br, I}$; $\text{Y} = \text{R, X, S}(\text{CH}_2)_b\text{CO}_2\text{R}_1$,
 $\text{S}(\text{CH}_2)_2\text{O}_2\text{CR}_1$; $\text{M} = \text{Zn, Al, Fe, Sb, Ti, Bi, Mn, Ga, Sn}$; $\text{b} = 1, 2$; $\text{l} =$
valence of M] and/or 0.01-5 phr $\text{HS}(\text{CH}_2)_p\text{CO}_2\text{R}_1$, $\text{HS}(\text{CH}_2)_2\text{O}_2\text{CR}_1$,
 $\text{HS}(\text{CH}_2)_p\text{CO}_2(\text{CH}_2)_q\text{O}_2\text{C}(\text{CH}_2)_t\text{pSH}$, $\text{HS}(\text{CH}_2)_2\text{O}_2\text{C}(\text{CH}_2)_t\text{CO}_2(\text{CH}_2)_2\text{SH}$,
 $\text{C}[\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_t\text{pSH}]_4$, and/or $\text{MeC}[\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_t\text{pSH}]_3$ ($\text{p} = 1, 2$; $\text{q} = 2\text{-4}$;
 $\text{t} = 0\text{-8}$). Thus, HA 15F (chlorinated PVC) 100, Bu_2Sn
bis(2-ethylhexyl maleate) 2, Me_2SnCl_2 2.0, and Wax E 1 part were
mixed and rolled to give a 0.5-mm sheet, 6 of which were stacked and
pressed at 170.degree. for 10 min to show yellowness index 9.2, vs.
24.8 without Me_2SnCl_2 .

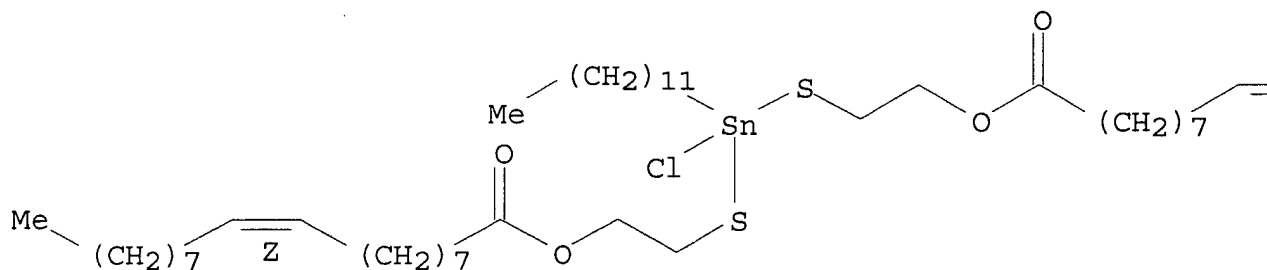
IT 137324-14-2
(heat stabilizers, for chlorinated PVC)

RN 137324-14-2 ZCAPLUS

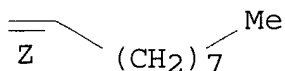
CN 9-Octadecenoic acid (9Z)-, (chlorododecylstannylene)bis(thio-2,1-
ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

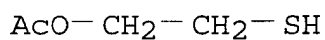
PAGE 1-A



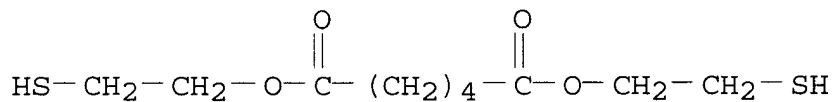
PAGE 1-B



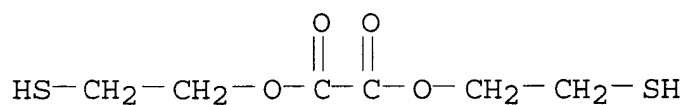
IT 5862-40-8, 2-Mercaptoethyl acetate 10194-00-0,
 Bis(2-mercaptoethyl) adipate 137297-11-1,
 Bis(2-mercaptoethyl) oxalate
 (heat stabilizers, with organotin compds., for chlorinated PVC)
 RN 5862-40-8 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



RN 10194-00-0 ZCAPLUS
 CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

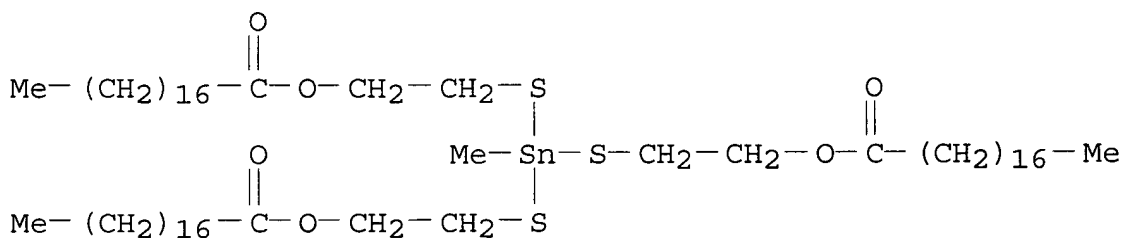


RN 137297-11-1 ZCAPLUS
 CN Ethanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



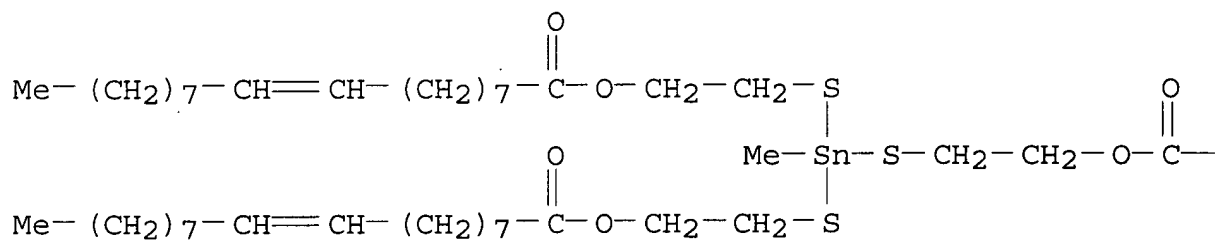
IT 137324-14-2

- (heat stabilizers, for chlorinated PVC)
- IT 5862-40-8, 2-Mercaptoethyl acetate 10194-00-0,
Bis(2-mercaptoethyl) adipate 137297-11-1,
Bis(2-mercaptoethyl) oxalate
(heat stabilizers, with organotin compds., for chlorinated PVC)
- L26 ANSWER 5 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
- 1987:120858 Document No. 106:120858 Sulfur compound-organotin compound mixtures as heat stabilizers for halogenated resins. Bohlen, Joseph M. (Pennwalt Corp. , USA). Eur. Pat. Appl. EP 208044 A2 19870114, 22 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1986-100014 19860102. PRIORITY: US 1985-751392 19850703.
- AB Mixts. for the title use comprise (a) alkali or alk. earth metal salts of mercaptans or mercapto acids, optionally .ltoreq.96% replaced by overbased org. complexes of metal bases, and (b) R1a(R2S)3-aSnSmSnR3b(SR4)3-b [R1-4 = (un)substituted alkyl or aryl, a,b = 1 or 2, m = 1-10] or combinations of organotin sulfides and .ltoreq.99.5% organotin mercaptides with CSnS groups. A mixt. of PVC 100, 10:90 Et acrylate-Me acrylate copolymer processing aid 2.0, acrylic impact modifier 7.0, wax 1.0, partially sapond. ester was 0.1, Ca stearate 1.5, TiO2 10.0, dimethyltin bis(2-mercaptoethyl stearate) 0.45, methyltin tris(2-mercaptoethyl stearate) 0.20, methyltin sesquisulfide 0.10, and Ba bis(2-mercaptoethyl stearate) 0.75 parts had Brabender-dynamic-heat-stability failure time 28 min.
- IT 59118-76-2, Methyltintris(2-mercaptoethylstearate)
59118-79-5, Methyltintris(2-mercaptoethyl oleate)
59138-44-2, Dimethyltinbis(2-mercaptoethylstearate)
67859-63-6, Dimethyltinbis(2-mercaptoethyl oleate)
69128-10-5, Barium 2-mercaptoethyl stearate
85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
, Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
2-mercaptoethyl stearate 95115-35-8 107258-68-4
(heat stabilizers, for halogenated resins)
- RN 59118-76-2 ZCAPLUS
- CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

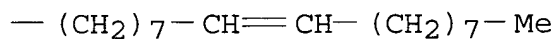


- RN 59118-79-5 ZCAPLUS
- CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

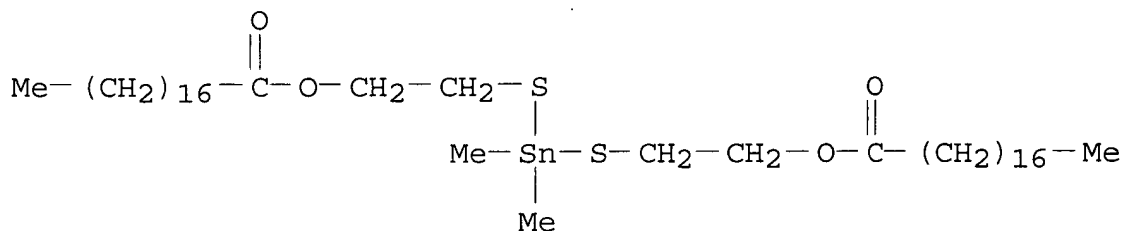


PAGE 1-B



RN 59138-44-2 ZCAPLUS

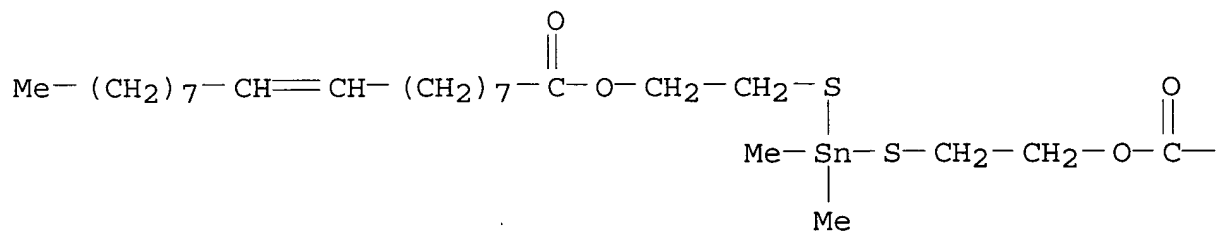
Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



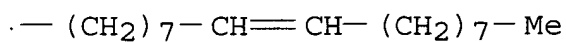
RN 67859-63-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

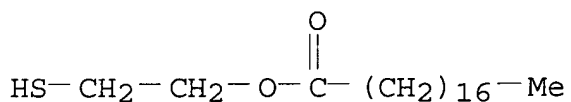


PAGE 1-B



RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

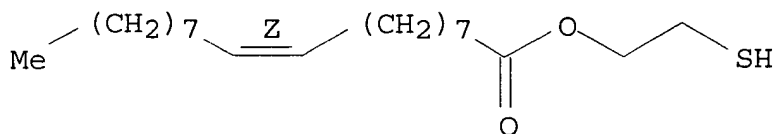


● 1/2 Ba

RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.

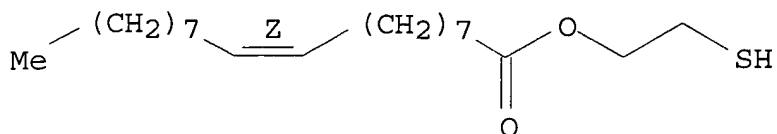


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)

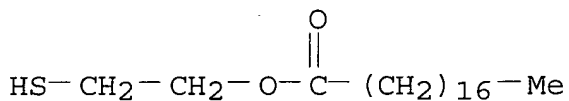
Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

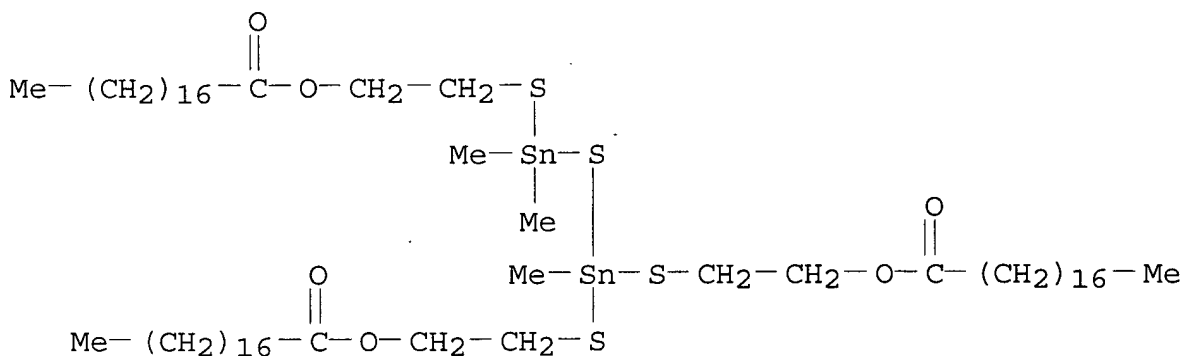
CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)



● 1/2 Ca

RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

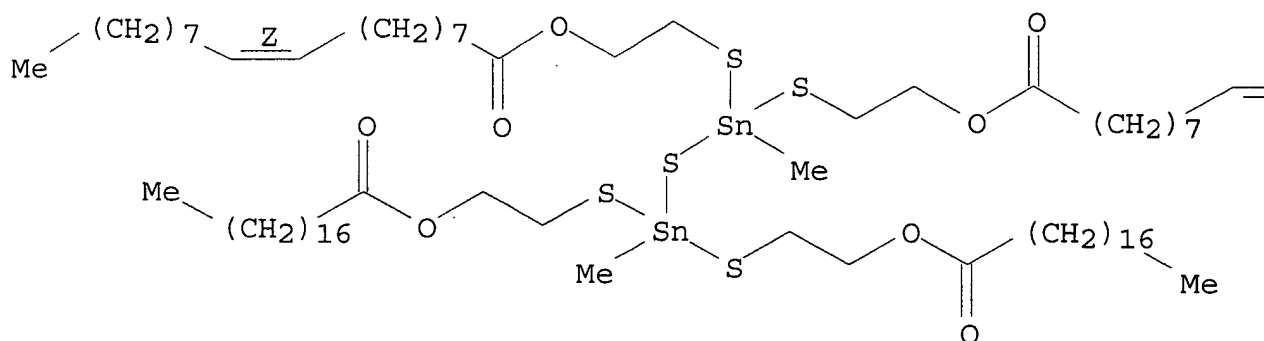


RN 107258-68-4 ZCAPLUS

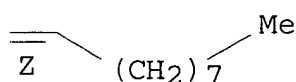
CN 9-Octadecenoic acid (9Z)-, [1,3-dimethyl-3,3-bis[[2-[(1-oxooctadecyl)oxy]ethyl]thio]distannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 59118-76-2, Methyltintris(2-mercaptoethylstearate)
 59118-79-5, Methyltintris(2-mercaptoethyloleate)
 59138-44-2, Dimethyltinbis(2-mercaptoethylstearate)
 67859-63-6, Dimethyltinbis(2-mercaptoethyloleate)
 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
 2-mercaptoethyl stearate 95115-35-8 107258-68-4
 (heat stabilizers, for halogenated resins)

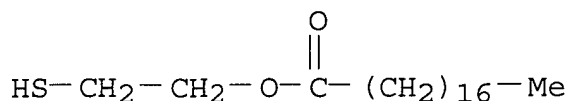
L26 ANSWER 6 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1987:120801 Document No. 106:120801 Stabilizer compositions for
 poly(vinyl chloride). Kugele, Thomas G.; Mesch, Keith A.;
 Wursthorn, Karl R. (Morton Thiokol, Inc., USA). U.S. US 4617334 A
 19861014, 17 pp. Cont. of U.S. Ser. No. 406,586, abandoned.
 (English). CODEN: USXXAM. APPLICATION: US 1984-654580 19840924.
 PRIORITY: US 1982-406586 19820809.

AB A compn. used to stabilize halogen-contg. polymers against heat
 degrdn. contains org. Sb compds., having .gtoreq.1 SbSC linkage,
 mercaptan-contg. org. compds., and metal mercapto alcs. having
 .gtoreq.1 nonbenzylic Sb or Sn atom bonded to S. The stabilized
 polymers are useful in the manuf. of pipes. A PVC (Geon 103
 EP-F-76) compn. contg. Sb(SCH2CO2C8H17)3 0.3, HSCH2CH2O2CC17H33 0.1,
 and Sn(SCH2CH2OH)4 0.05 phr was masticated at 193.degree., and
 exhibited no obvious color change, up to 5 min.

IT 27564-01-8, 2-Mercaptoethyl stearate 104033-28-5
 (heat stabilizers contg., for PVC)

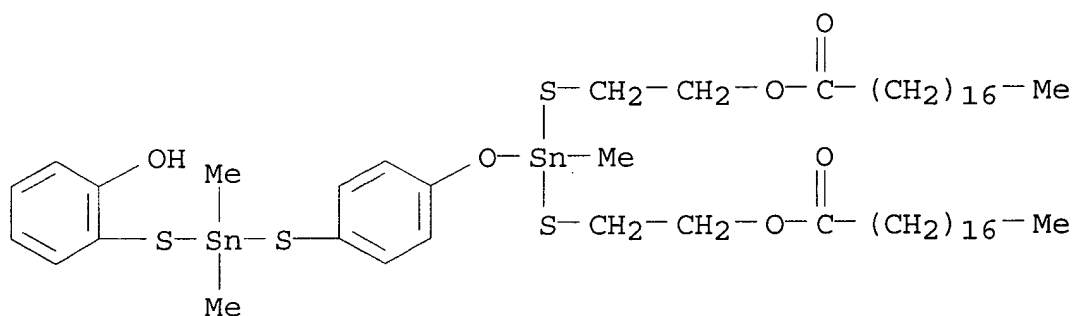
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 104033-28-5 ZCAPLUS

CN Octadecanoic acid, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



IT 27564-01-8, 2-Mercaptoethyl stearate 104033-28-5
(heat stabilizers contg., for PVC)

L26 ANSWER 7 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1986:498600 Document No. 105:98600 Stabilizers for polymers. Kugele,
Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA).
Can. CA 1202170 A1 19860325, 70 pp. (English). CODEN: CAXXA4.
APPLICATION: CA 1983-435649 19830830.

AB Heat stabilizers for halogenated polymers comprise synergic mixts.
of Sb mercaptides; thiols; and hydroxylated Sn or Sb mercaptides.
Thus, compounded PVC contg. Sb(SCH2CO2C8H17)3 0.3, HS(CH2)2O2CC17H33
(I) 0.1, and Sn[S(CH2)2OH]4 (II) 0.05 phr had color rating 10 (10
white, 0 burnt) after milling 5 min at .apprx.193.degree., compared
with 8 without II or III.

IT 104033-27-4 104033-29-6
(heat stabilizers, for PVC)

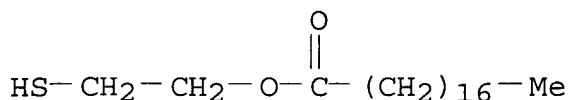
RN 104033-27-4 ZCAPLUS

CN Octadecenoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 27564-01-8

CMF C20 H40 O2 S



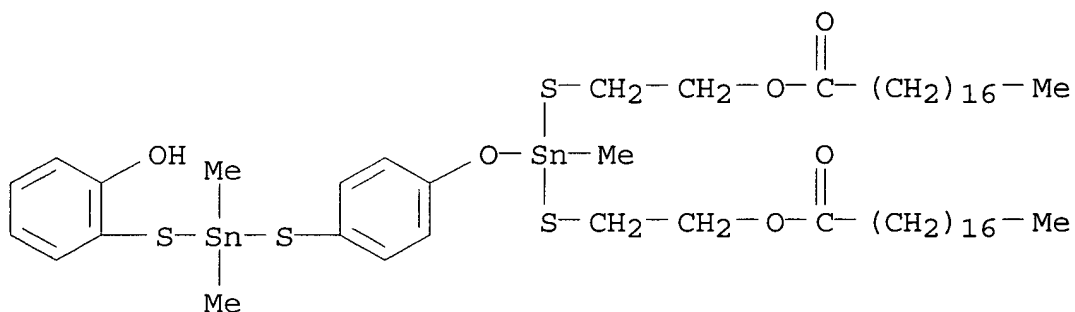
RN 104033-29-6 ZCAPLUS

CN Octadecenoic acid, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

CM 1

CRN 104033-28-5

CMF C55 H96 O6 S4 Sn2



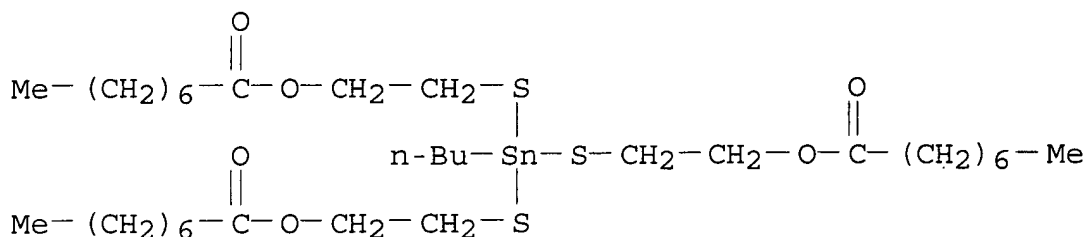
IT 104033-27-4 104033-29-6
(heat stabilizers, for PVC)

L26 ANSWER 8 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1986:225735 Document No. 104:225735 An evaluation of the effects of antimony and tin stabilizer on the fusion characteristics of PVC dryblends. Clark, Dane L.; Hollo, Brenda J.; Tornstrom, Paul K.; Turnbull, Robert E.; Woodley, Tom R. (Synth. Prod. Co., Cleveland, OH, 44110, USA). Journal of Vinyl Technology, 8(1), 27-31 (English) 1986. CODEN: JVTEDI. ISSN: 0193-7197.

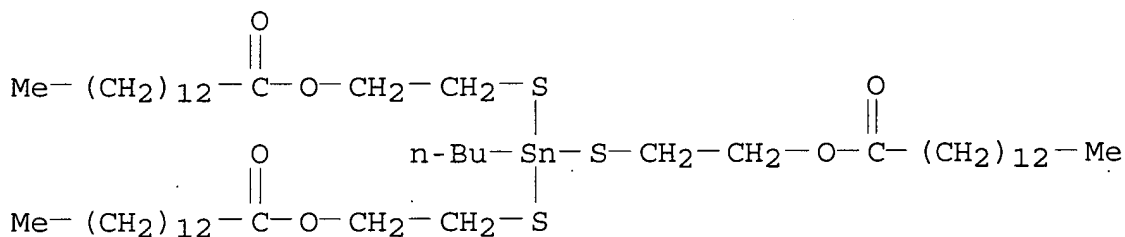
AB The Sn stabilizers did not promote fusion of PVC [9002-86-2] dry blend. Sn stabilizers with shorter chain esters (C <10) had no effect on compd. fusion and those contg. longer chain esters retarded fusion. Sb stabilizers promoted fusion in the single screw compd.; Sb stabilizers with short chain esters promoted fusion more strongly than those contg. long chain esters. Fusion times were not strongly affected by ester type. Sn and Sb stabilizers plasticized PVC to approx. the same extent, and DOP [117-81-7] plasticized PVC much more strongly.

IT 59118-80-8 68928-34-7 83943-32-2
85508-79-8 102525-91-7 102565-70-8
102565-71-9 102578-19-8
(stabilizers, for PVC, fusion in relation to)

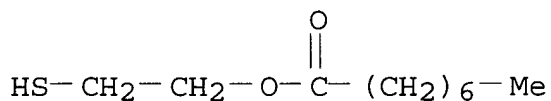
RN 59118-80-8 ZCAPLUS
 CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



RN 68928-34-7 ZCAPLUS
 CN Tetradecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl)
 ester (9CI) (CA INDEX NAME)

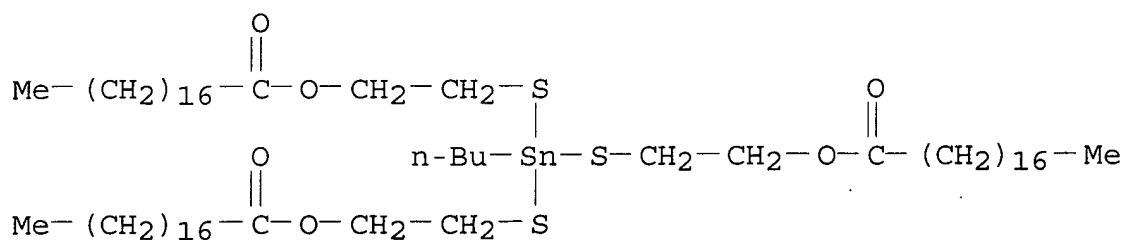


RN 83943-32-2 ZCAPLUS
 CN Octanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI) (CA
 INDEX NAME)



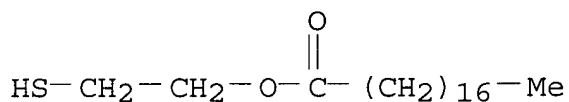
● 1/3 Sb(III)

RN 85508-79-8 ZCAPLUS
 CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl)
 ester (9CI) (CA INDEX NAME)



RN 102525-91-7 ZCAPLUS

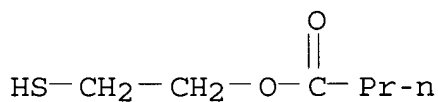
Octadecanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI)
(CA INDEX NAME)



● 1/3 Sb (III)

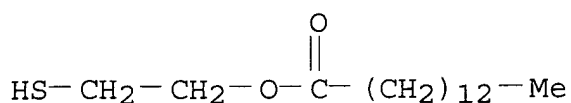
RN 102565-70-8 ZCAPLUS

Butanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI) (CA
INDEX NAME)


$$1/3 \text{ Sb (III)}$$

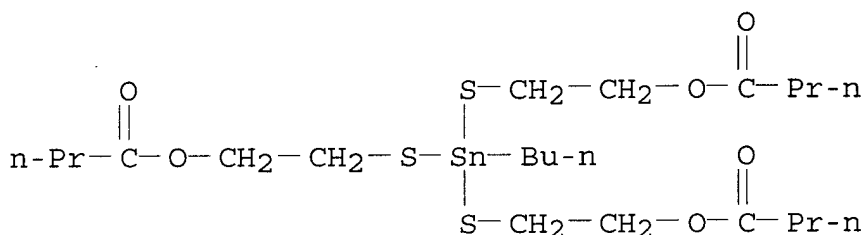
RN 102565-71-9 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI)
 (CA INDEX NAME)



● 1/3 Sb(III)

RN 102578-19-8 ZCAPLUS
 CN Butanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



IT 59118-80-8 68928-34-7 83943-32-2
 85508-79-8 102525-91-7 102565-70-8
 102565-71-9 102578-19-8
 (stabilizers, for PVC, fusion in relation to)

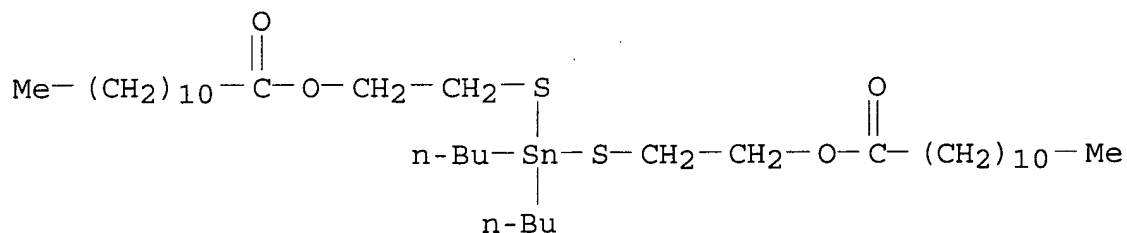
L26 ANSWER 9 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1985:454810 Document No. 103:54810 Characterization of organotin
 stabilizers and related structure compounds by gel permeation
 chromatography. Jirackova-Audouin, L.; Ranceze, D.; Verdu, J. (Dep.
 Mater., ENSAM, Paris, 75013, Fr.). Analysis, 13(2), 59-64 (French)
 1985. CODEN: ANLSCY. ISSN: 0365-4877.

AB Gel-permeation chromatog. with refractometric and UV absorptiometric
 detection was useful in characterization of 26 organotin derivs.,
 useful as heat stabilizers for PVC [9002-86-2]. The behavior of
 these derivs. were compared to those of org. compds. contg. the same
 functional groups except Sn. The structure-retention time relations
 were discussed.

IT 28570-24-3 82530-60-7 85508-79-8
 97388-19-7

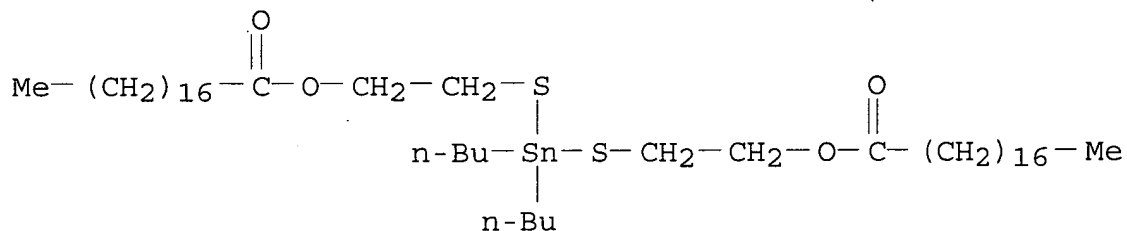
(gel-permeation chromatog. of, for heat stabilizers, for PVC)

RN 28570-24-3 ZCAPLUS
 CN Dodecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



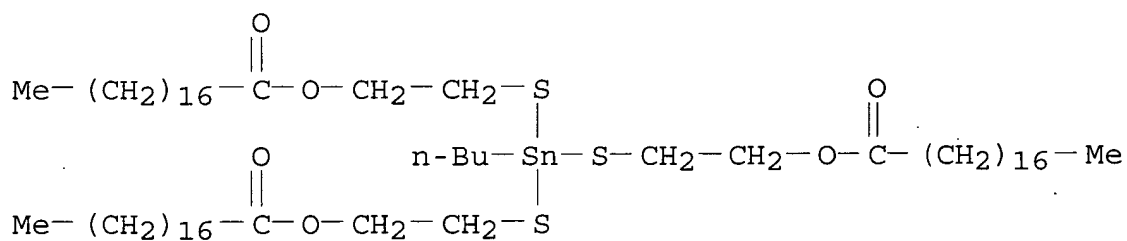
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



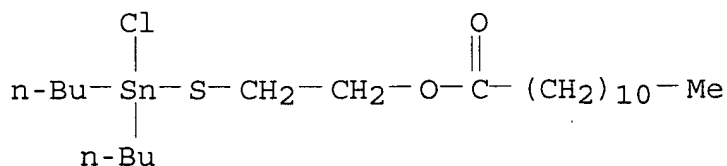
RN 85508-79-8 ZCAPLUS

CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 97388-19-7 ZCAPLUS

CN Dodecanoic acid, 2-[(dibutylchlorostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

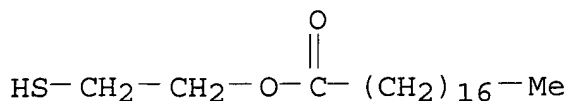


IT 27564-01-8 60642-66-2

(gel-permeation chromatog. of, in characterization of organotin compds. contg. thio-ester groups, for heat stabilizers, for PVC)

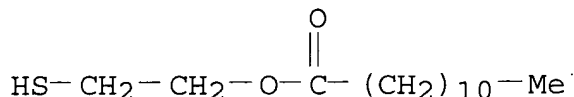
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 60642-66-2 ZCAPLUS

CN Dodecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 28570-24-3 82530-60-7 85508-79-8
97388-19-7

(gel-permeation chromatog. of, for heat stabilizers, for PVC)

IT 27564-01-8 60642-66-2

(gel-permeation chromatog. of, in characterization of organotin compds. contg. thio-ester groups, for heat stabilizers, for PVC)

L26 ANSWER 10 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

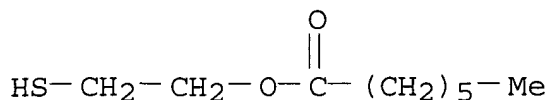
1985:96513 Document No. 102:96513 Heat stabilizers for halogenated resins. Bohen, Joseph Michael; Reifenberg, Gerald Harvey (Pennwalt Corp., USA). Eur. Pat. Appl. EP 124833 A1 19841114, 24 pp. DESIGNATED STATES: R: BE, DE, FR, GB, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1984-104741 19840427. PRIORITY: US 1983-489881 19830429.

AB Halogen-free heat stabilizer compns. for halogenated resins comprise (A) an aliph. mercaptan and (B) .gtoreq.1 S-contg. organotin compd., whereby .ltoreq.80% of the mercaptan can be replaced by an alkali or alk. earth metal salt of a mercaptan or mercapto acid and the A-B wt. ratio is (1-25):(1-20). Thus, PVC [9002-86-2] 100, paraffin wax 1.2, oxidized polyethylene wax 0.15, Ca stearate 0.6, CaCO₃ 2.0, TiO₂ 1.0, and 15:85 methyltin sesquisulfide + 2-mercaptoethyl stearate [27564-01-8] stabilizer 0.5 parts were mixed in a blender, masticated at 370.degree.F and rated visually for discoloration. A resin compn. contg. a binary stabilizer remained white after 15 min of processing, whereas a compn. contg. only 1 of the stabilizers was discolored after 3-12 min..

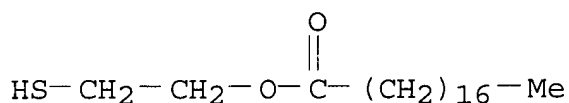
IT 22909-87-1 27564-01-8 29946-28-9
30982-97-9 59118-76-2 59118-93-3
59138-44-2 68298-40-8 69128-10-5
95115-32-5 95115-35-8 95115-37-0
95115-38-1

(heat stabilizers, for halogenated resins)

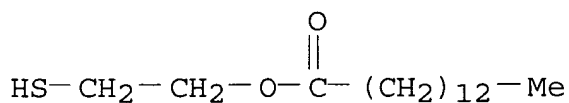
CN Heptanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



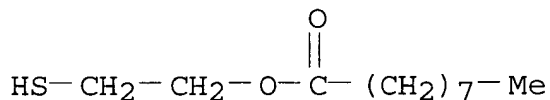
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



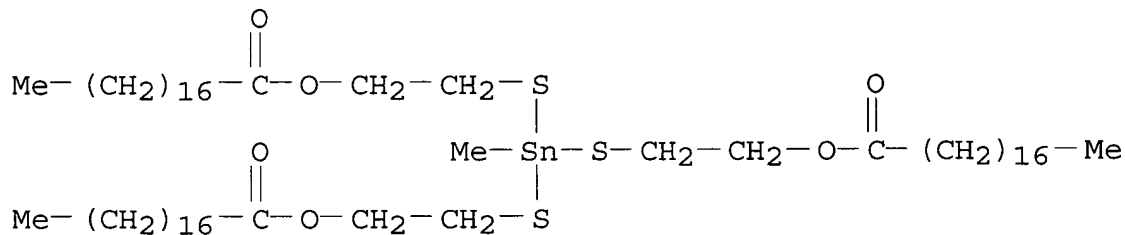
CN Tetradecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)

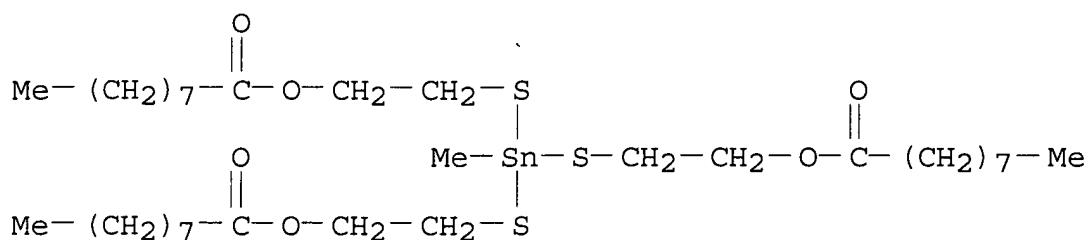


CN	Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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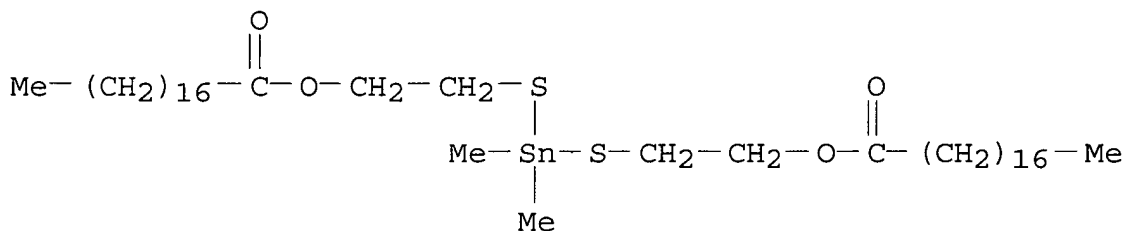
RN 59118-93-3 ZCAPLUS

CN Nonanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



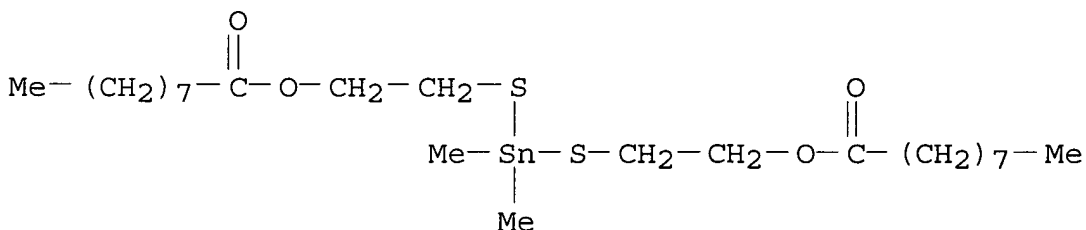
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



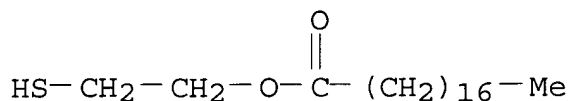
RN 68298-40-8 ZCAPLUS

CN Nonanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



RN 69128-10-5 ZCAPLUS

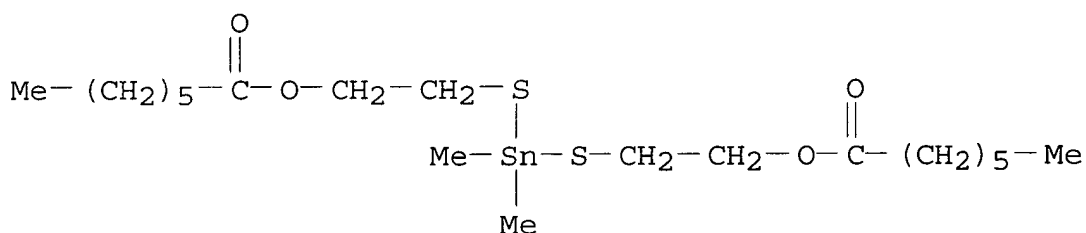
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA
INDEX NAME)



● 1/2 Ba

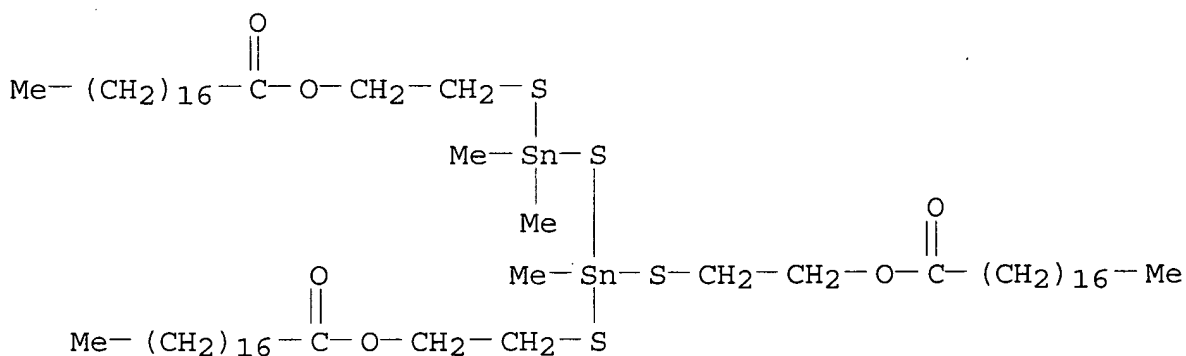
RN 95115-32-5 ZCAPLUS

CN Heptanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



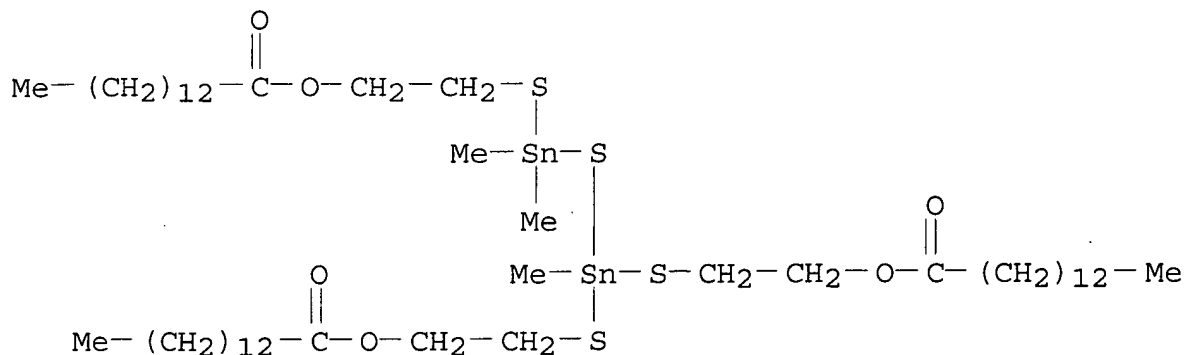
RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



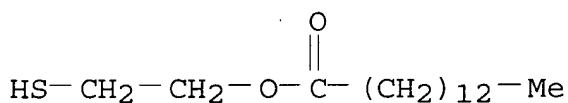
RN 95115-37-0 ZCAPLUS

CN Tetradecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 95115-38-1 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 22909-87-1 27564-01-8 29946-28-9
 30982-97-9 59118-76-2 59118-93-3
 59138-44-2 68298-40-8 69128-10-5
 95115-32-5 95115-35-8 95115-37-0
 95115-38-1

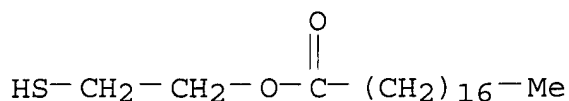
(heat stabilizers, for halogenated resins)

L26 ANSWER 11 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:406529 Document No. 99:6529 Stabilizer composition. Bohn, Joseph Michael (Pennwalt Corp. , USA). Braz. Pedido PI BR 8102789 A 19821214, 40 pp. (Portuguese). CODEN: BPXXDX. APPLICATION: BR 1981-2789 19810506.

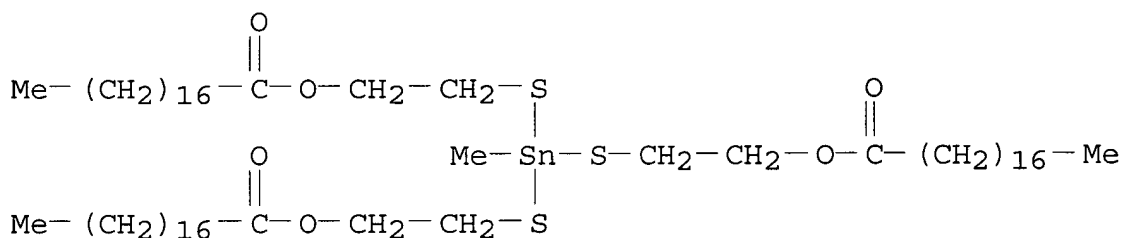
AB A heat stabilizer compn. for PVC [9002-86-2] comprises 1-80% of a Sn tetramercaptide and 20-99% of a S-contg. organotin compd. and may also contain 1-60% alkali metal or alk. earth metal mercaptide and/or 1-60% overbased org. complex. Thus, reaction of 0.4 mol isooctyl mercaptoacetate [25103-09-7] with 0.1 mol SnCl₄ in hexane contg. 0.4 mol Et₃N gave 87% Sn(SCH₂CO₂R)₄ (R = isooctyl) (I) [62568-17-6]. A compounded PVC resin contg. 1.20 phr dimethyltin bis(isooctyl mercaptoacetate) [26636-01-1] and 0.30 phr I remained white for .gtoreq.12 min in a Brabender Plastograph at 213.degree., whereas a similar PVC compn. without the 2 stabilizers turned pink in 3 min and grey in 6 min.

IT 80233-79-0
 (heat stabilizers, for PVC)
 RN 80233-79-0 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



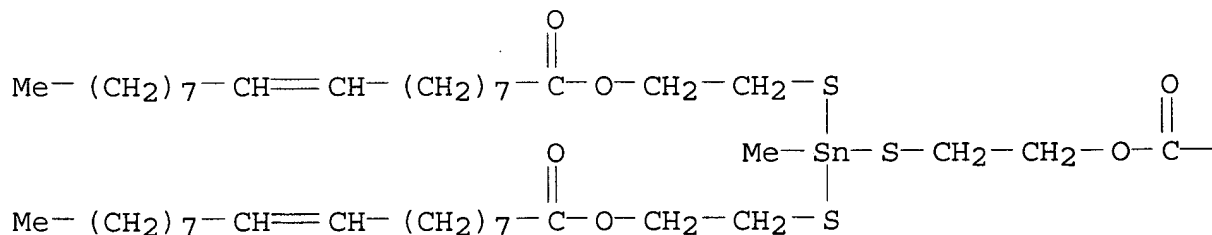
● 1/4 Sn(IV)

IT 59118-76-2 59118-79-5 59138-44-2
 67361-76-6 67361-77-7 67859-63-6
 69128-10-5 82530-60-7 85508-79-8
 85508-82-3 85508-84-5 85508-85-6
 (heat stabilizers, with tin tetramercaptides, for PVC)
 RN 59118-76-2 ZCAPLUS
 CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

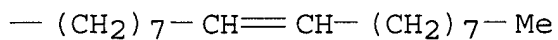


RN 59118-79-5 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

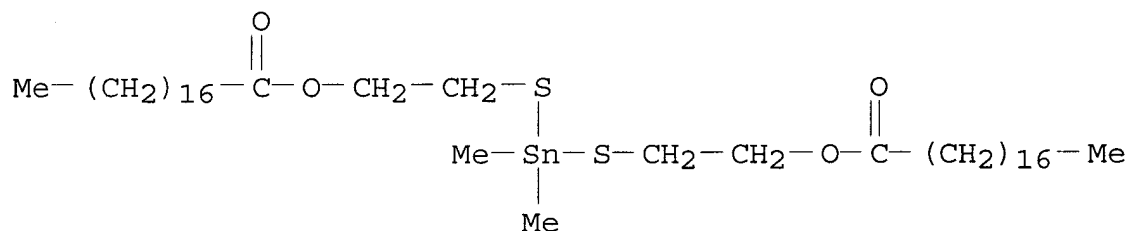


PAGE 1-B



RN 59138-44-2 ZCAPLUS

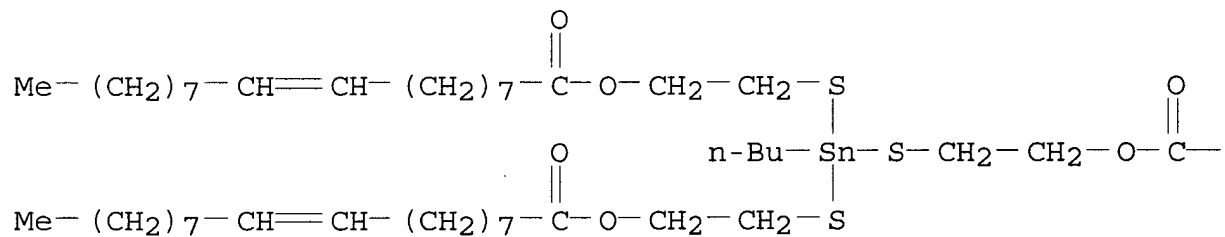
CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



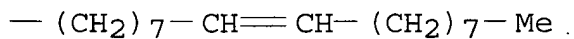
RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

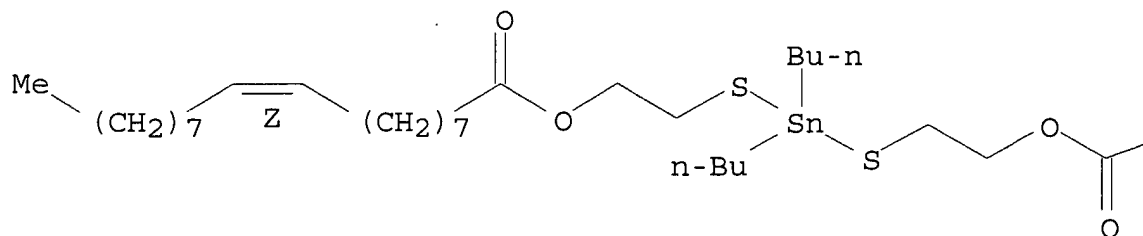


RN 67361-77-7 ZCAPLUS

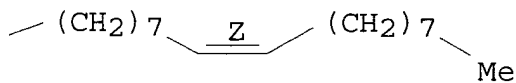
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



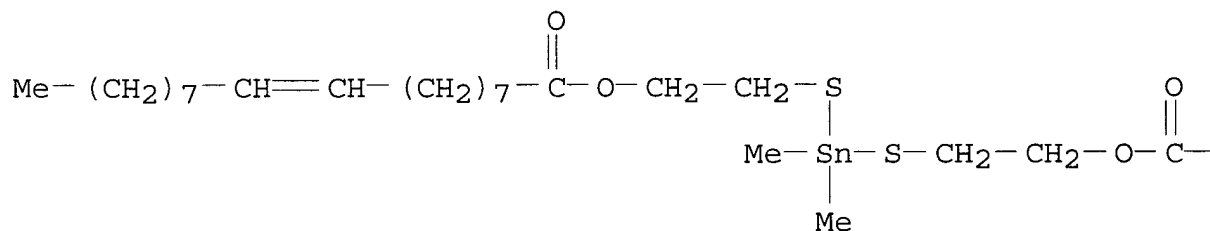
PAGE 1-B



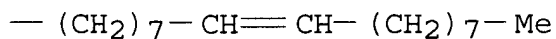
RN 67859-63-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

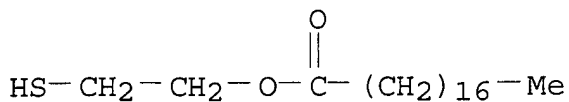


PAGE 1-B



RN 69128-10-5 ZCAPLUS

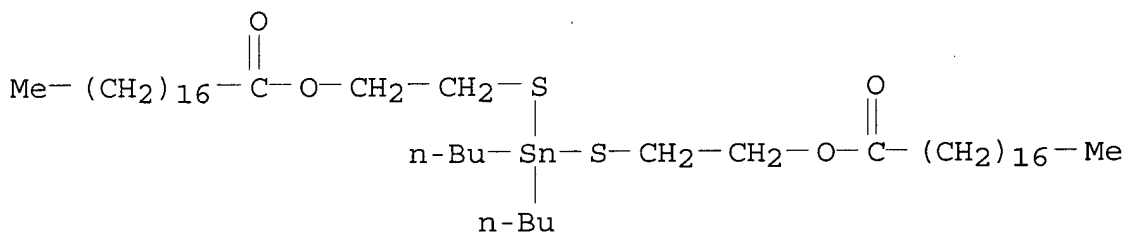
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

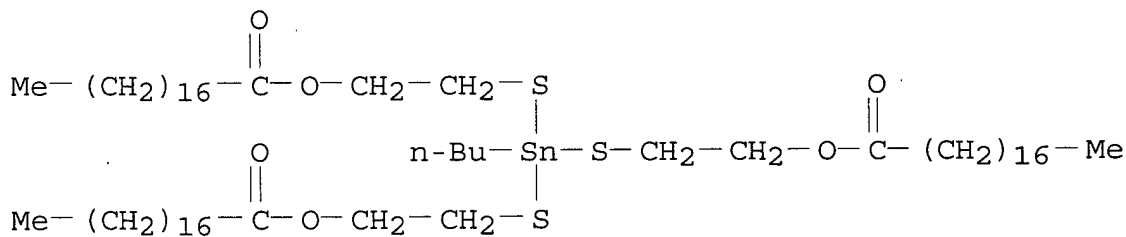
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-79-8 ZCAPLUS

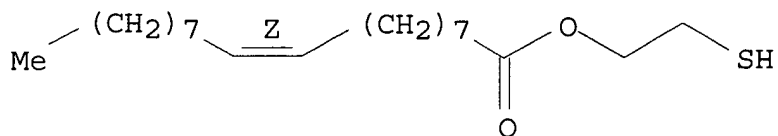
CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.

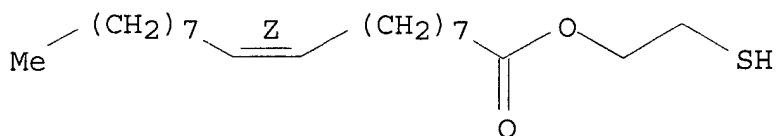


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

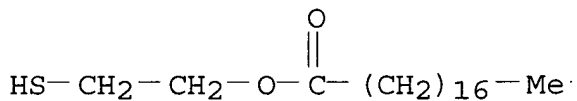
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA
INDEX NAME)

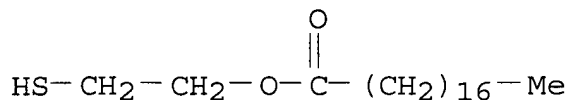
● 1/2 Ca

IT 27564-01-8

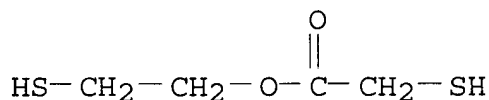
(reaction of, with stannic chloride)

RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

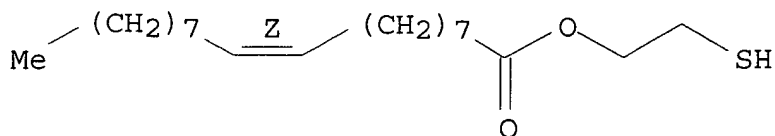


- IT 80233-79-0
(heat stabilizers, for PVC)
- IT 59118-76-2 59118-79-5 59138-44-2
67361-76-6 67361-77-7 67859-63-6
69128-10-5 82530-60-7 85508-79-8
85508-82-3 85508-84-5 85508-85-6
(heat stabilizers, with tin tetramercaptides, for PVC)
- .IT 27564-01-8
(reaction of, with stannic chloride)
- L26 ANSWER 12 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1983:199211 Document No. 98:199211 Stabilizer compositions for
polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958
A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US
1982-345828 19820204.
- AB Hydroxythiotin compds., SH-contg. org. compds., and optionally
organotin compds. are used as heat stabilizers for halogen-contg.
polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100,
Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6,
AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CCl₇H₃₃)₂ [85758-68-5]
0.02, HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and
MeSn(:S)SCH₂CH₂O₂CCl₇H₃₃ [83890-15-7] 0.40 part was
rolled at apprx.193.degree., and the color changed from white to
tan-orange after 8.5 min.
- IT 38705-47-4 59118-78-4 59118-80-8
59138-44-2 83890-15-7 83890-16-8
83890-20-4 85758-45-8 85758-52-7
85758-54-9 85758-55-0 85758-56-1
85758-57-2 85758-58-3 85758-61-8
85758-62-9 85758-64-1 85758-65-2
85758-67-4 85758-68-5
(heat stabilizers contg., for PVC)
- RN 38705-47-4 ZCAPLUS
CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



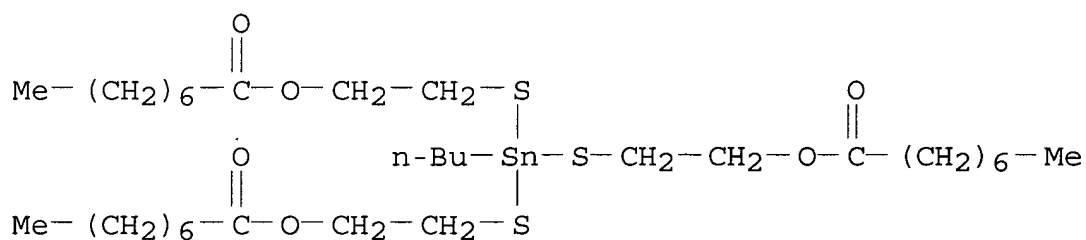
- RN 59118-78-4 ZCAPLUS
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



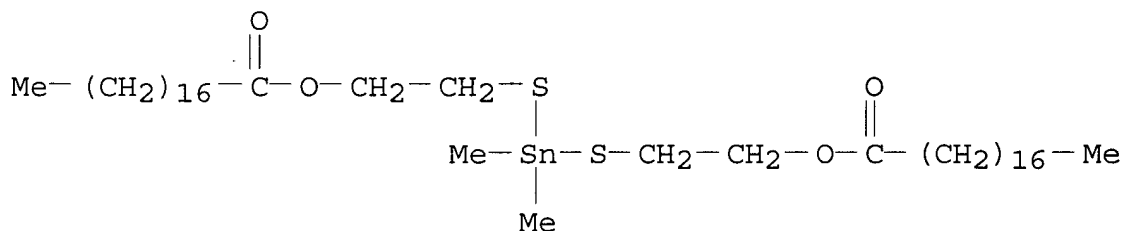
RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



RN 59138-44-2 ZCAPLUS

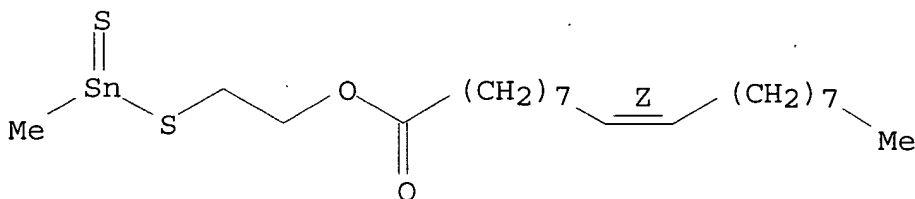
CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



RN 83890-15-7 ZCAPLUS

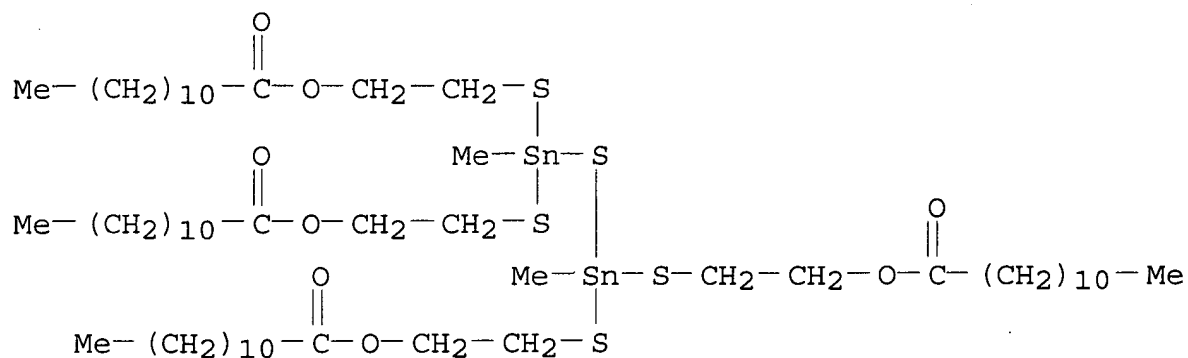
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester
(9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 83890-16-8 ZCAPLUS

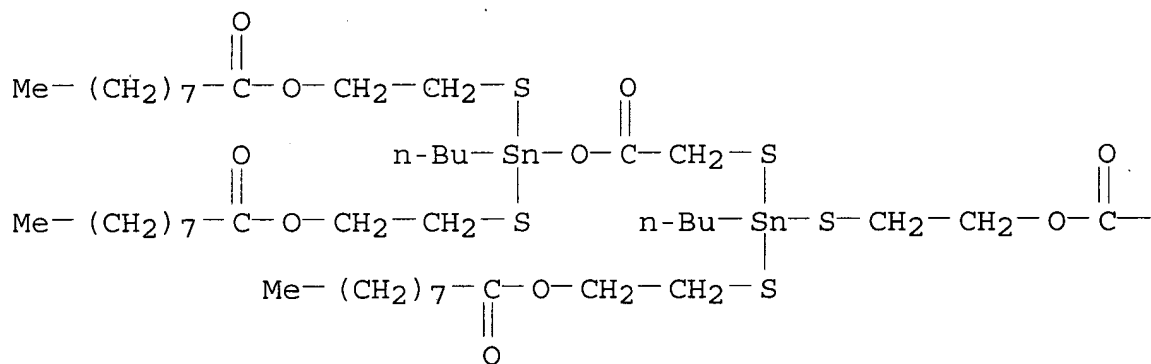
CN	Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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RN 83890-20-4 ZCAPLUS

CN Nonanoic acid, [butyl[[4-butyl-2,9-dioxo-4-[[2-[(1-oxononyl)oxy]ethyl]thio]-3,8-dioxo-5-thia-4-stannaheptadec-1-yl]thio]stannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

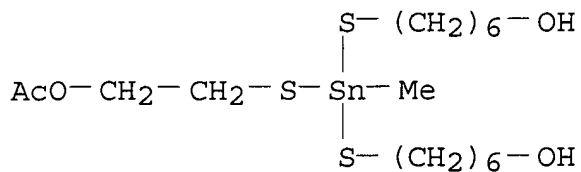


PAGE 1-B

$$-(\text{CH}_2)_7-\text{Me}$$

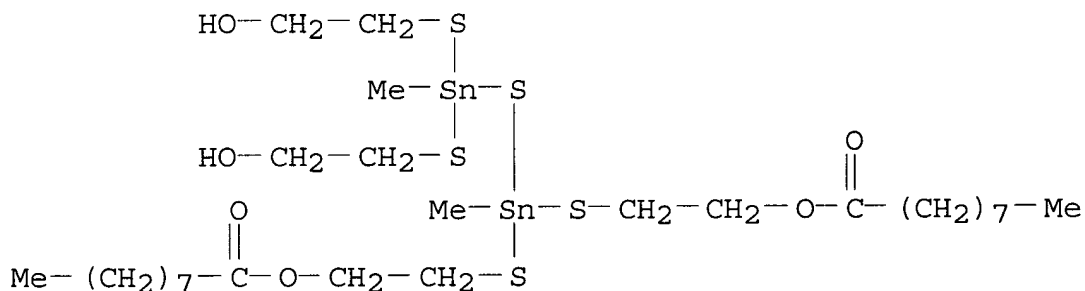
RN 85758-45-8 ZCAPLUS

CN 3-Oxa-6,8-dithia-7-stannatetradecan-14-ol, 7-[(6-hydroxyhexyl)thio]-7-methyl-2-oxo- (9CI) (CA INDEX NAME)



RN 85758-52-7 ZCAPLUS

CN Nonanoic acid, [3,3-bis[(2-hydroxyethyl)thio]-1,3-dimethyldistannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

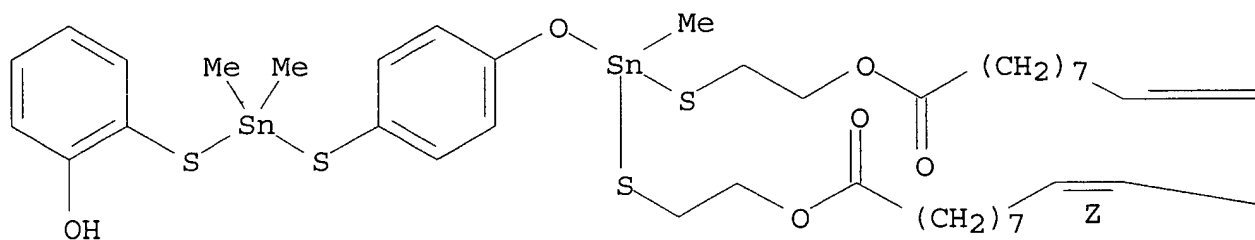


RN 85758-54-9 ZCAPLUS

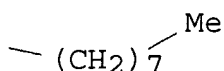
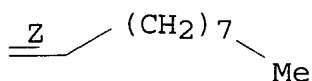
CN 9-Octadecenoic acid (9Z)-, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

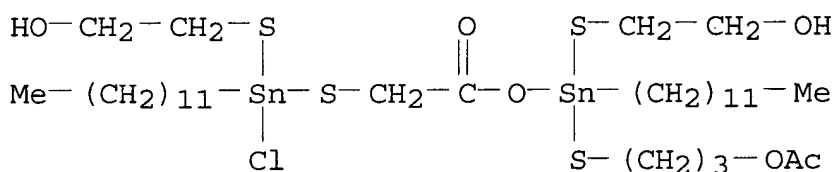


PAGE 1-B



RN 85758-55-0 ZCAPLUS

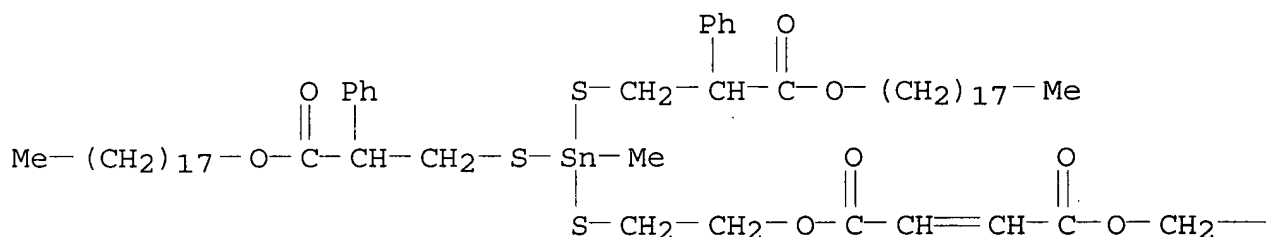
CN 8-Oxa-3,5,10-trithia-4,9-distannatridecane-1,13-diol,
4-chloro-4,9-didodecyl-9-[(2-hydroxyethyl)thio]-7-oxo-, 13-acetate
(9CI) (CA INDEX NAME)



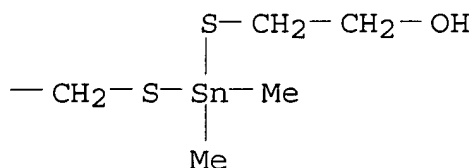
RN 85758-56-1 ZCAPLUS

CN 9-Oxa-4,6-dithia-5-stannatridec-11-enedioic acid,
5-methyl-5-[[[3-(octadecyloxy)-3-oxo-2-phenylpropyl]thio]-10-oxo-2-phenyl-, 13-[2-[[[(2-hydroxyethyl)thio]dimethylstannyl]thio]ethyl]
1-octadecyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

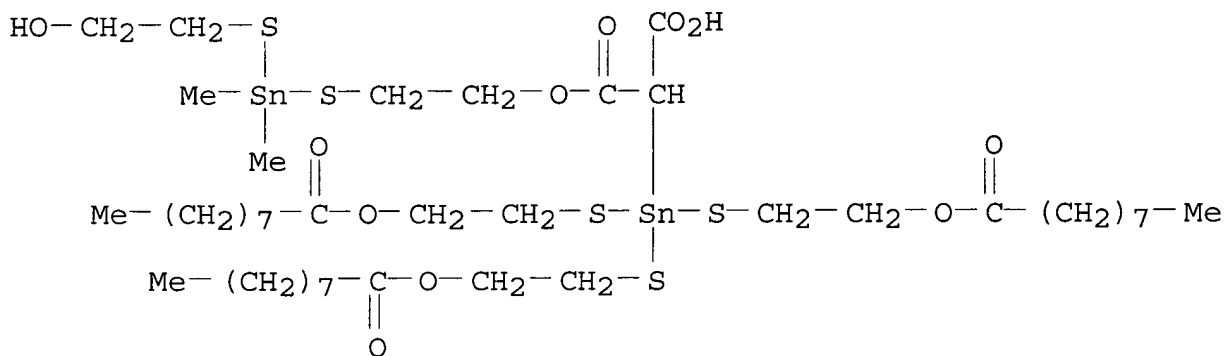


PAGE 1-B



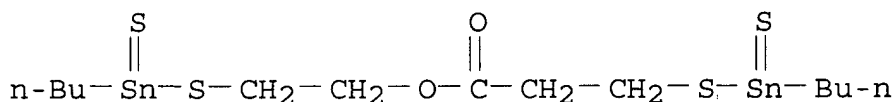
RN 85758-57-2 ZCAPLUS

CN Propanedioic acid, [tris[[2-[(1-oxononyl)oxy]ethyl]thio]stannyl]-, mono[2-[[[(2-hydroxyethyl)thio]dimethylstannyl]thio]ethyl] ester (9CI) (CA INDEX NAME)



RN 85758-58-3 ZCAPLUS

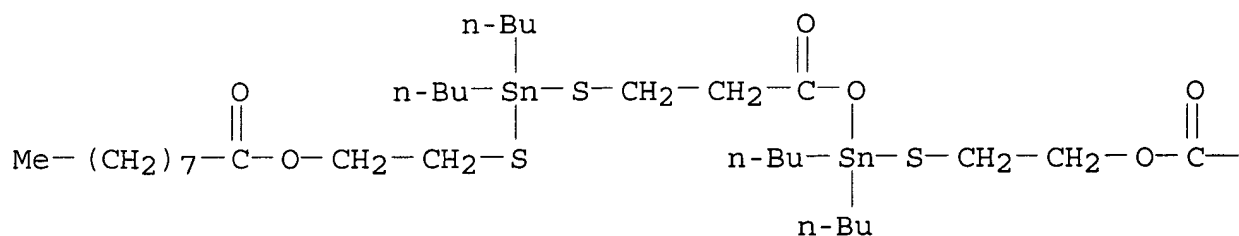
CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 2-[(butylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)



RN 85758-61-8 ZCAPLUS

CN Nonanoic acid, 4,4-dibutyl-6-oxo-5-oxa-3,9,11-trithia-4,10-distannatridecane-1,13-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



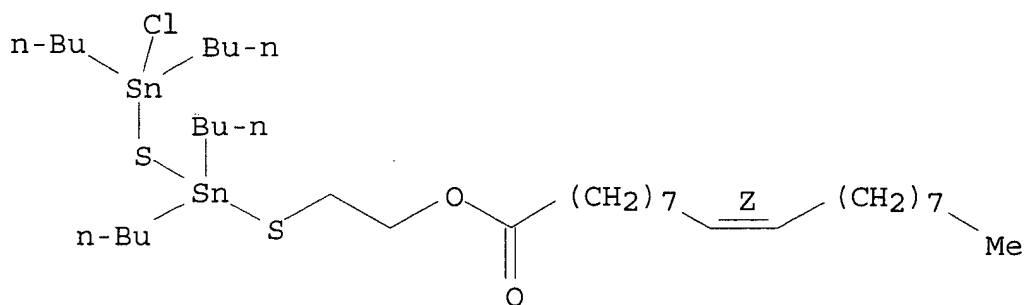
PAGE 1-B

— (CH₂)₇—Me

RN 85758-62-9 ZCAPLUS

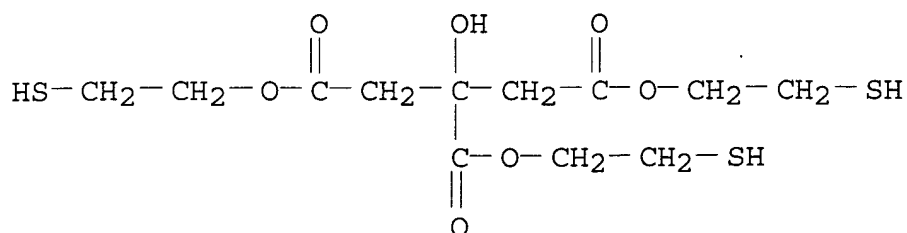
CN 9-Octadecenoic acid (9Z)-, 2-[(1,1,3,3-tetrabutyl-3-chlorodistannathianyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

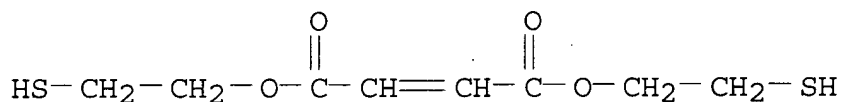


RN 85758-64-1 ZCAPLUS

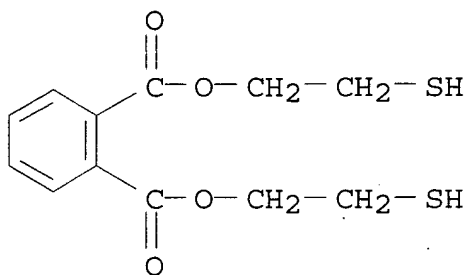
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

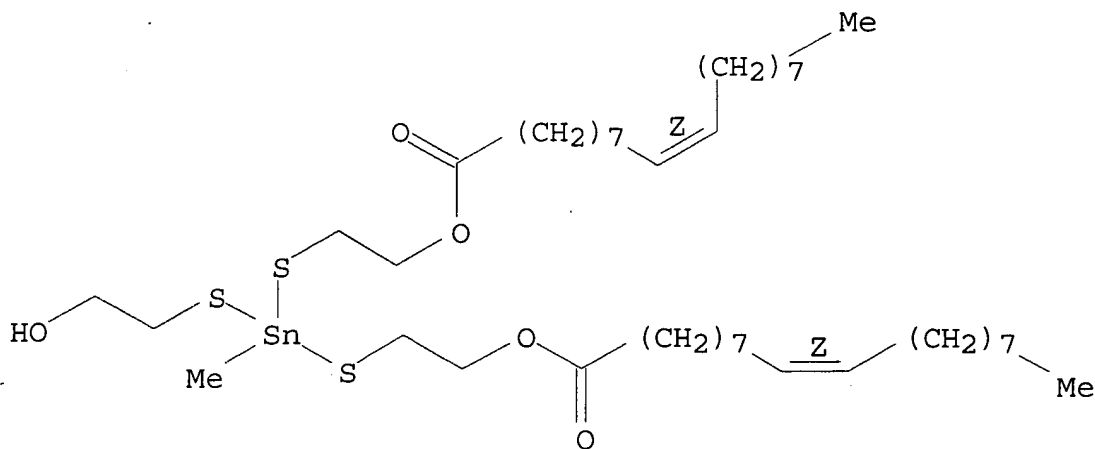


1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



CN 9-Octadecenoic acid (9Z)-, [[(2-hydroxyethyl)thio]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 38705-47-4 59118-78-4 59118-80-8
 59138-44-2 83890-15-7 83890-16-8
 83890-20-4 85758-45-8 85758-52-7
 85758-54-9 85758-55-0 85758-56-1
 85758-57-2 85758-58-3 85758-61-8
 85758-62-9 85758-64-1 85758-65-2
 85758-67-4 85758-68-5
 (heat stabilizers contg., for PVC)

L26 ANSWER 13 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

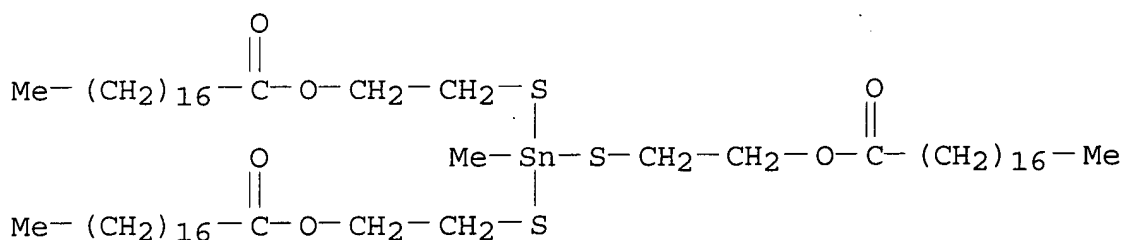
1983:199204 Document No. 98:199204 Stabilizer for halogenated resins.
 (Pennwalt Corp., USA). Neth. Appl. NL 8101857 A 19821101, 26 pp.
 (Dutch). CODEN: NAXXAN. APPLICATION: NL 1981-1857 19810415.

AB A heat stabilizer for preventing discoloration of halogenated
 resins, esp. vinyl chloride resins, consists of a S-contg. organotin
 compd., a tin tetrakis mercaptide, an alkali or alk. earth metal
 salt of a mercaptan or mercapto acid, and an overbased org. complex
 based on an alkali for alk. earth metal base. Thus, to 100 wt.
 parts poly(vinyl chloride) [9002-86-2] contg. the usual additives
 were added methyltin tris(2-mercaptoethyl stearate) [
 59118-76-2] 1.10, an overbased BaCO₃ org. complex (prepd.
 with p-nonylphenol) 0.10 barium bis(2-mercaptoethyl stearate)
 [513-77-9] 0.15, and tin tetrakis(2-mercaptoethyl stearate)
 [62568-17-6] 0.15 part in a blender. The resulting plastic did not
 change its white color for 15 min at 213.degree..

IT 59118-76-2 69128-10-5
 (heat stabilizers, contg. barium carbonate overbased complex, for
 PVC)

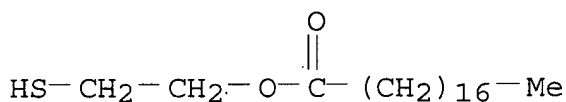
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
 ester (9CI) (CA INDEX NAME)



RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 59118-76-2 69128-10-5

(heat stabilizers, contg. barium carbonate overbased complex, for PVC)

L26 ANSWER 14 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:180439 Document No. 98:180439 Heat stabilizers for poly(vinyl chloride). (Pennwalt Corp., USA). Jpn. Kokai Tokkyo Koho JP 57174332 A2 19821027 Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1981-57235 19810417.

AB Heat-resistant PVC [9002-86-2] compns. contain 20-99:1-80 mixt. of a -CSnS- group-contg. compd. and a Sn tetramercaptide-type compd. and optionally alkali or alk. earth metal salts with mercaptans or mercaptocarboxylic acids and/or basic alkali or alk. earth metal salt org. complexes. For example, a compn. from PVC 100, K-120N (acrylic polymer) 3.0, paraffin wax 0.5, partially saponified ester wax 0.2, Ca stearate 1.4, TiO₂ 2.0, dimethyltin bis(isooctyl thioglycolate) [26636-01-1] 1.20, and tin tetrakis(isooctyl thioglycolate) [62568-17-6] 0.30 part had yellowing resistance (at 415.degree.F) > 12 min.

IT 59118-76-2 59118-79-5 59138-44-2

67361-76-6 67361-77-7 67859-63-6

69128-10-5 80233-79-0 82530-60-7

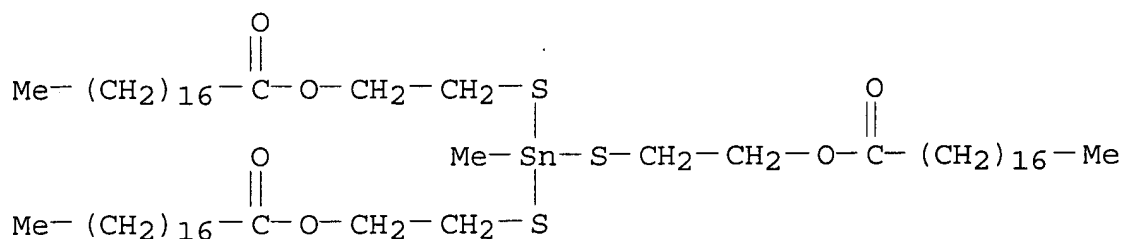
85490-98-8 85508-79-8 85508-82-3

85508-84-5 85508-85-6

(heat stabilizers contg., for PVC)

RN 59118-76-2 ZCAPLUS

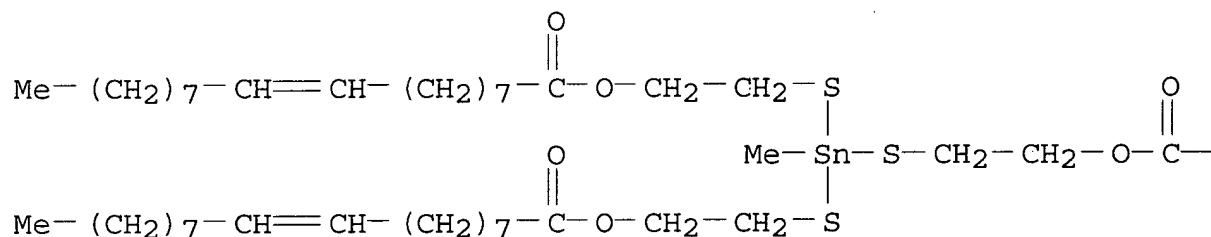
CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



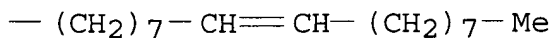
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

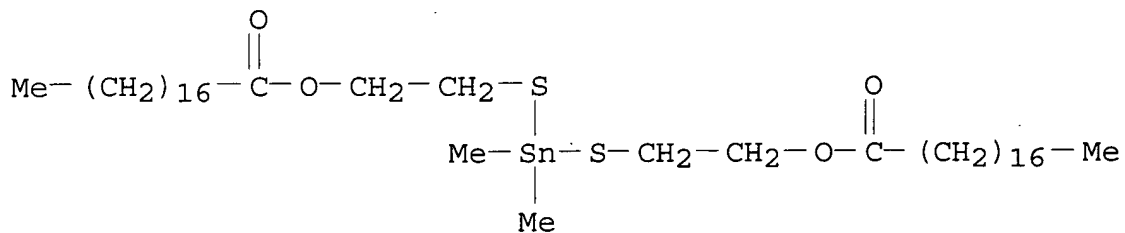


PAGE 1-B



RN 59138-44-2 ZCAPLUS

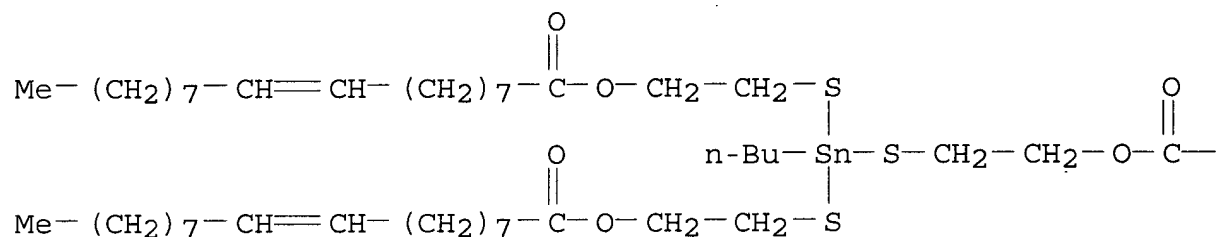
CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



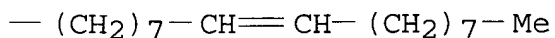
RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

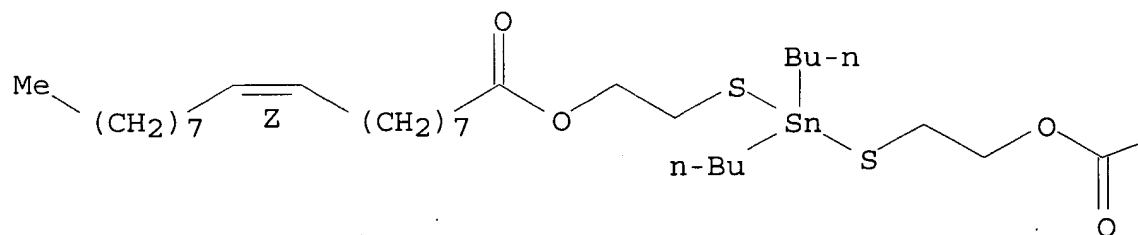


RN 67361-77-7 ZCAPLUS

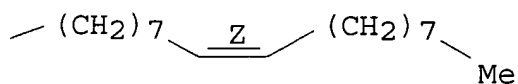
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



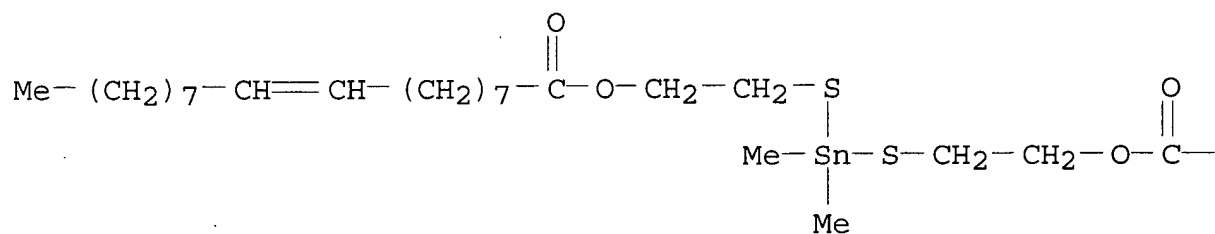
PAGE 1-B



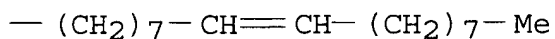
RN 67859-63-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

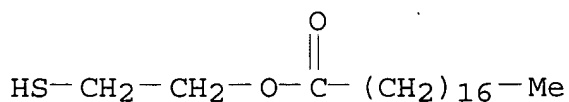


PAGE 1-B



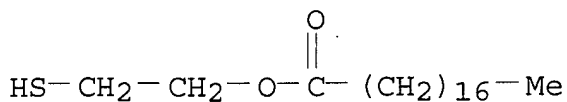
RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



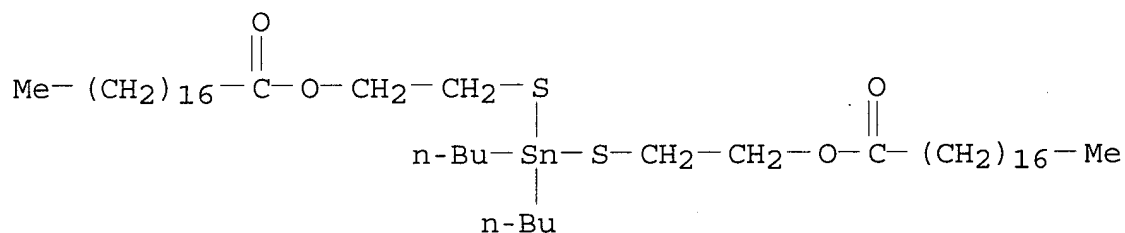
1/2 Ba

RN 80233-79-0 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



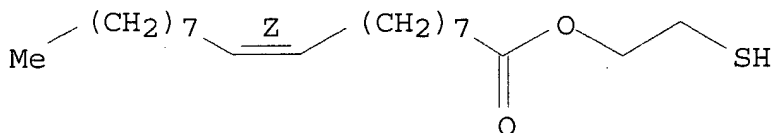
● 1/4 Sn(IV)

RN 82530-60-7 ZCAPLUS
 CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



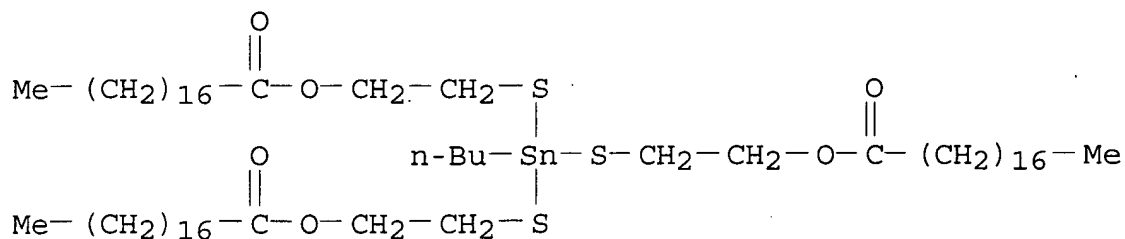
RN 85490-98-8 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.



● 1/4 Sn(IV)

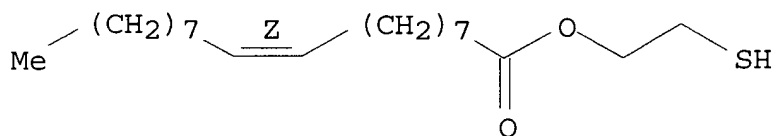
RN 85508-79-8 ZCAPLUS
 CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-82-3 ZCAPLUS

9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

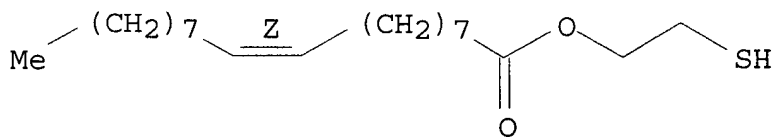


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

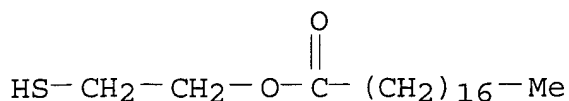
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

 $\bullet 1/2 \text{ Ca}$

RN 85508-85-6 ZCAPLUS

CN	Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI)	(CA
	INDEX NAME)	



● 1/2 Ca

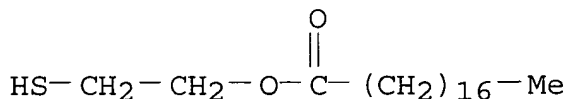
IT 59118-76-2 59118-79-5 59138-44-2
 67361-76-6 67361-77-7 67859-63-6
 69128-10-5 80233-79-0 82530-60-7
 85490-98-8 85508-79-8 85508-82-3
 85508-84-5 85508-85-6
 (heat stabilizers contg., for PVC)

L26 ANSWER 15 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:5118 Document No. 98:5118 Polymer stabilizing compositions.
 Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab
 Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.
 PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

AB Effective heat stabilizers for polymers comprise .gtoreq.1
 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1
 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated
 CaCO₃ 3.0, TiO₂ 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized
 polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7]
 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were dry
 blended at 110.degree.. The mixt. was then roll milled at 193.degree.,
 the color turning from white to tan-orange in 5-6 min.

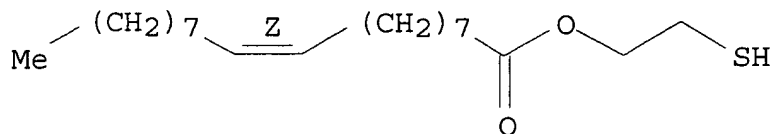
IT 27564-01-8 59118-78-4 59118-80-8
 59138-44-2 83890-15-7 83890-16-8
 83890-17-9
 (heat stabilizer compns. contg., for PVC)

RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

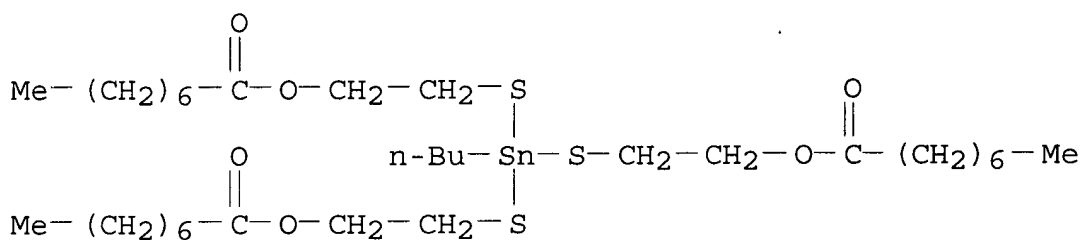


RN 59118-78-4 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX
 NAME)

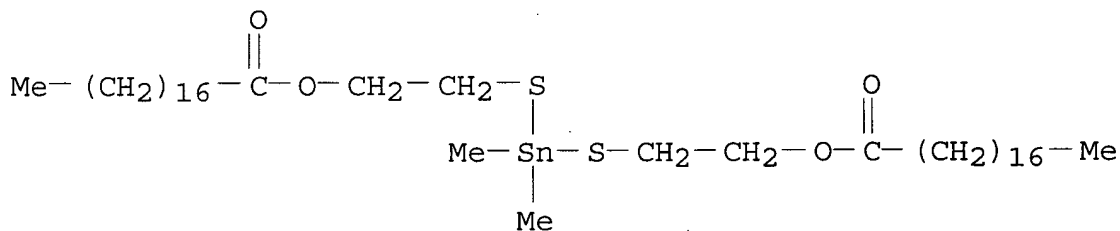
Double bond geometry as shown.



RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

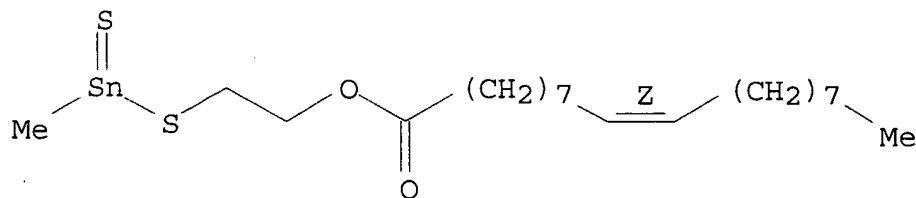
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

RN 83890-15-7 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester
(9CI) (CA INDEX NAME)

Double bond geometry as shown.

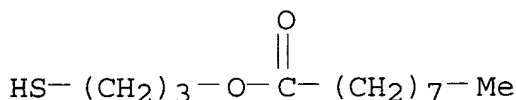


RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(

$$\begin{array}{c}
 \text{Me}-(\text{CH}_2)_{10}-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 | \\
 \text{Me}-\text{Sn}-\text{S} \\
 | \\
 \text{Me}-(\text{CH}_2)_{10}-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 | \\
 \text{Me}-(\text{CH}_2)_{10}-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}-(\text{CH}_2)_{10}-\text{Me}
 \end{array}$$

CN	Nonanoic acid, 3-mercaptopropyl ester (9CI)	(CA INDEX NAME)
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IT 27564-01-8 59118-78-4 59118-80-8
59138-44-2 83890-15-7 83890-16-8
83890-17-9
(heat stabilizer compns. contg., for PVC)

L26 ANSWER 16 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1983:5117 Document No. 98:5117 Polymer stabilizing compositions and
their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R.
(Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp.
DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
(English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225.
PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

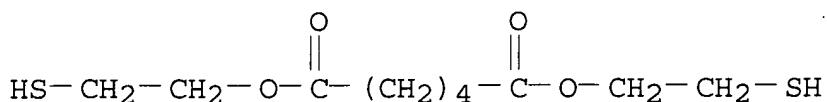
AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane 0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl 3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride [993-16-8] 0.01 part were dry blended at 110.degree.. The compn. was then roll milled at 193.degree., requiring 6 min for a color change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8
59118-78-4 59118-80-8 59138-44-2
83890-15-7 83890-16-8 83890-17-9
83890-18-0 83890-20-4 83899-94-9
(heat stabilizer compns. contg., for PVC)

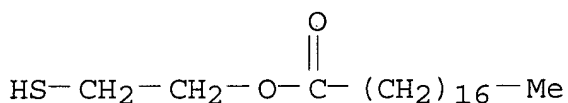
RN 5862-40-8 ZCAPLUS

$$\text{AcO}-\text{CH}_2-\text{CH}_2-\text{SH}$$

CN	Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI)	(CA INDEX NAME)
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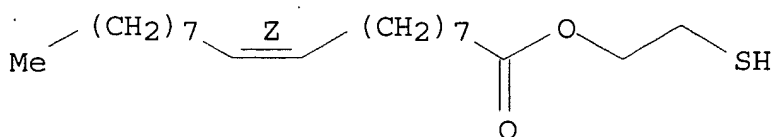


CN	Octadecanoic acid, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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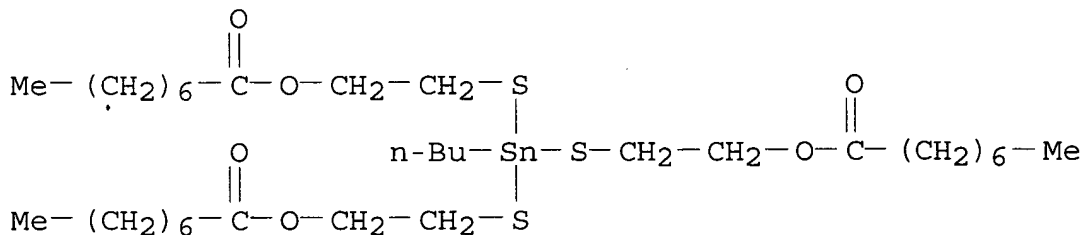


CN	9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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Double bond geometry as shown.

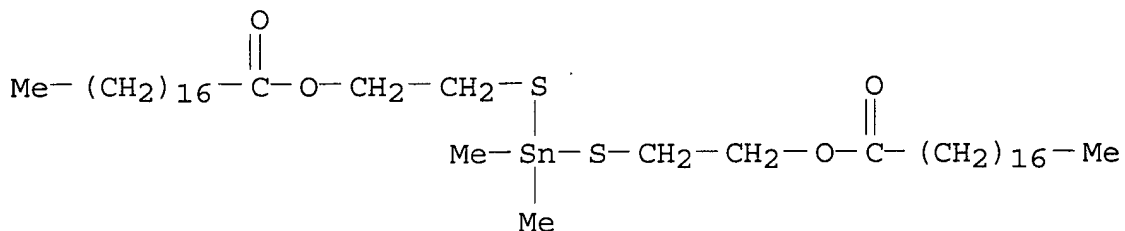


CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



RN 59138-44-2 ZCAPLUS

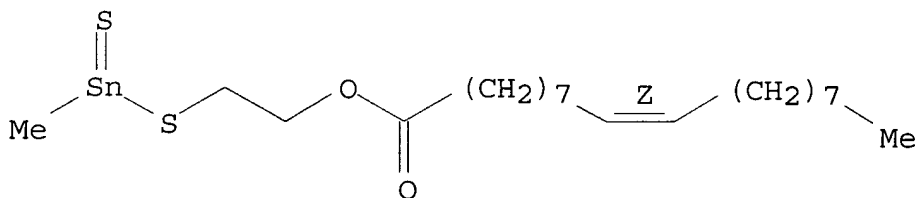
CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-15-7 ZCAPLUS

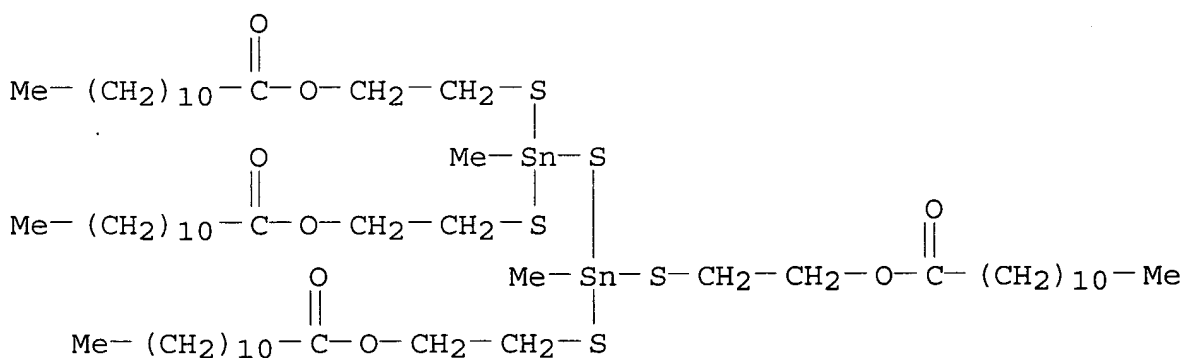
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



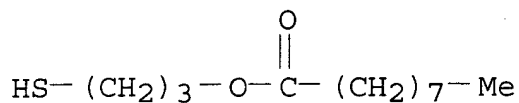
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)

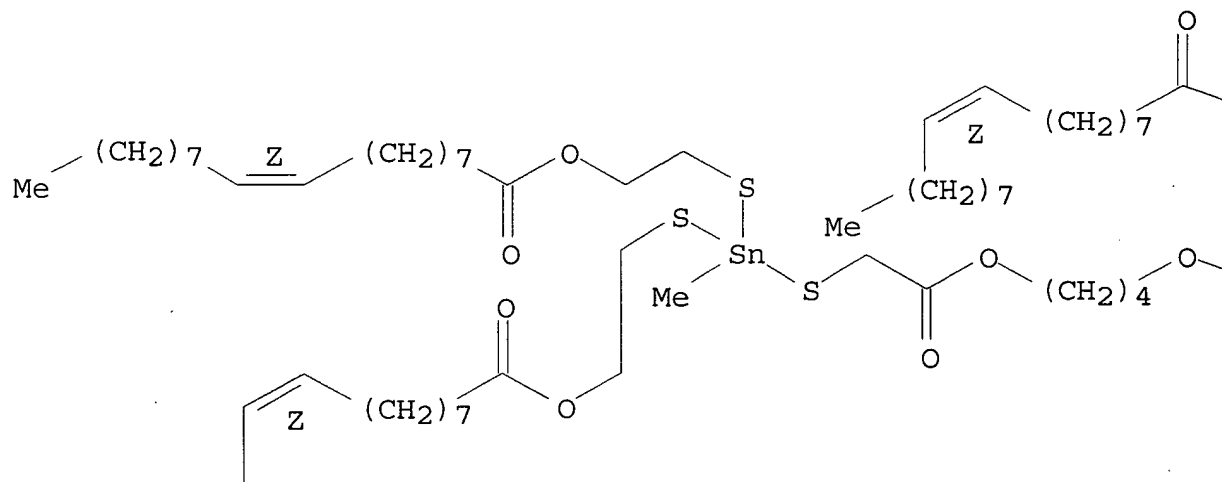


RN 83890-18-0 ZCAPLUS

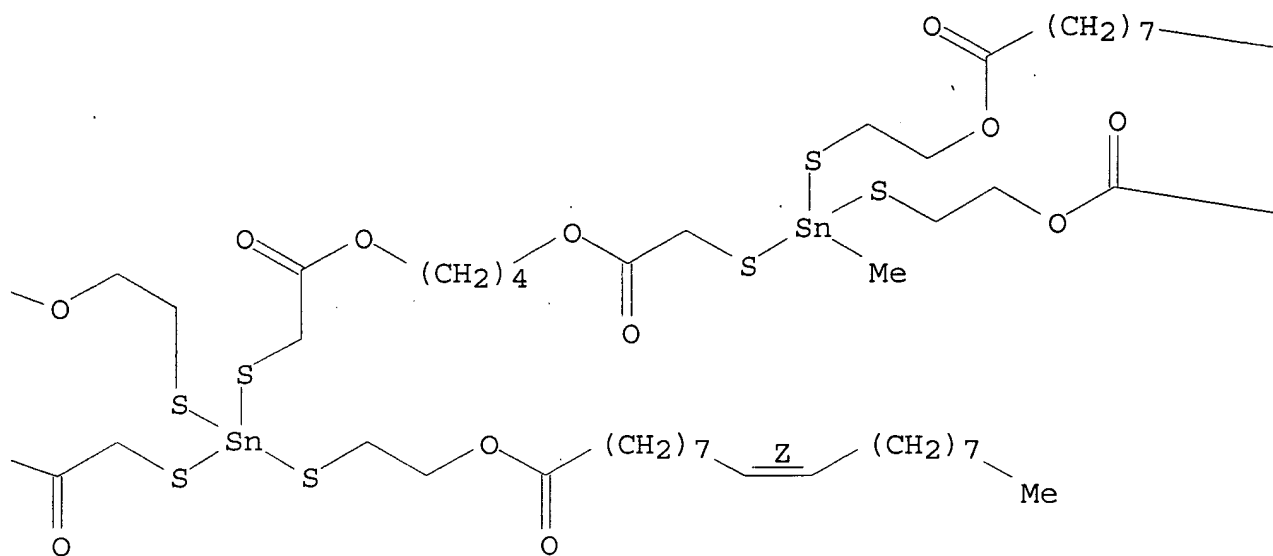
CN 8,13,21-Trioxa-3,5,16,18-tetrathia-4,17-distannanonatriacont-30-enoic acid, 17-methyl-7,14,22-trioxo-4,4,17-tris[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-, 9-methyl-6,14-dioxo-9-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-5,13-dioxo-8,10-dithia-9-stannahentriacont-22-en-1-yl ester, (all-Z) - (9CI) (CA INDEX NAME)

Double bond geometry as shown.

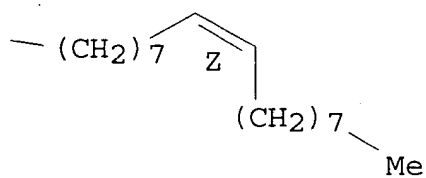
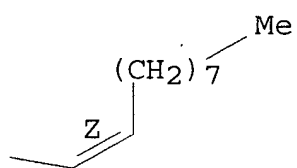
PAGE 1-A



PAGE 1-B



PAGE 1-C



59118-78-4 59118-80-8 59138-44-2

83890-15-7 83890-16-8 83890-17-9

83890-18-0 83890-20-4 83899-94-9

(heat stabilizer compns. contg., for PVC)

L26 ANSWER 17 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:493439 Document No. 97:93439 Sterilization of vinyl halide polymer articles with ionizing radiations. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50070 A2 19820421, 19 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401511 19810930. PRIORITY: FR 1980-21662 19801010.

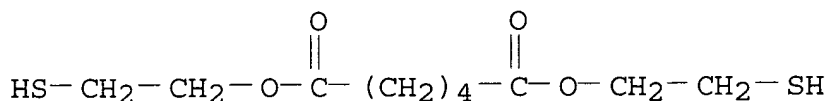
AB An organotin compd. or organoantimony compd. and a thiol (contg. 1 SH group/3-10 C) are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3% glycerol bis(mercaptoacetate) I) [63657-12-5] and exposed to .gamma. radiation (2.76 Mrad). The resin was colorless. A resin contg. no I was strongly discolored after irradiation.

IT 10194-00-0 82530-57-2 82530-58-3
82530-60-7 82538-18-9

(stabilization of PVC against ionizing radiation by)

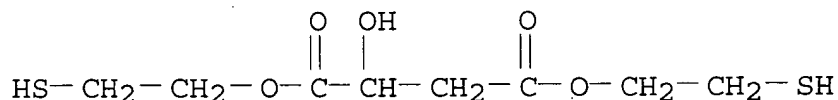
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



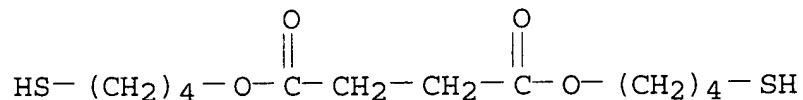
RN 82530-57-2 ZCAPLUS

CN Butanedioic acid, hydroxy-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

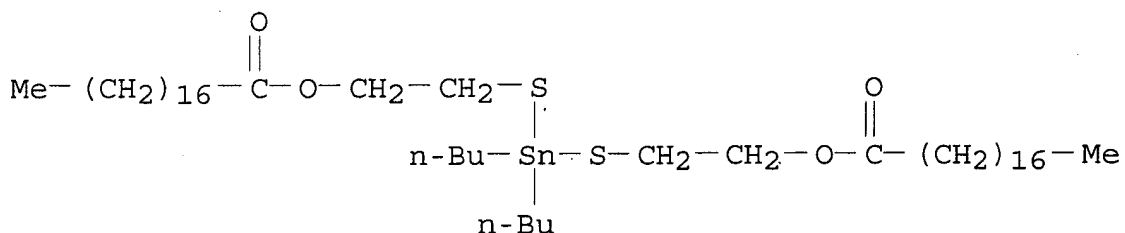


RN 82530-58-3 ZCAPLUS

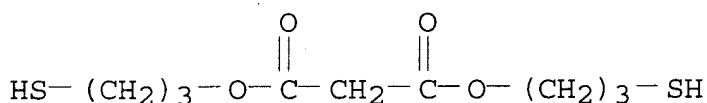
CN Butanedioic acid, bis(4-mercaptobutyl) ester (9CI) (CA INDEX NAME)



RN 82530-60-7 ZCAPLUS
 CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 82538-18-9 ZCAPLUS
 CN Propanedioic acid, bis(3-mercaptopropyl) ester (9CI) (CA INDEX NAME)



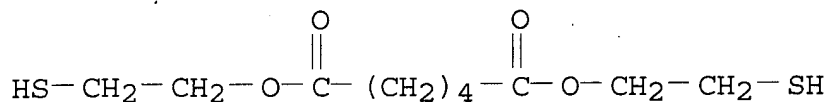
IT 10194-00-0 82530-57-2 82530-58-3
 82530-60-7 82538-18-9
 (stabilization of PVC against ionizing radiation by)

L26 ANSWER 18 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1982:493438 Document No. 97:93438 Polymers resistant against ionizing radiation. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50071 A2 19820421, 18 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401512 19810930. PRIORITY: FR 1980-21816 19801013.

AB An organotin or organoantimony compd., a thiol, and hydroquinone (I) [123-31-9] are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂NH₂) [82684-97-7] was mixed with 3% bis(2-mercaptoethyl) adipate (II) [10194-00-0] and 0.5% I and exposed to gamma. radiation (2.76 Mrad). The resin was slightly discolored. A resin contg. no I was slightly more discolored. A resin contg. no I or II was strongly discolored.

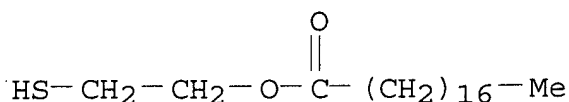
IT 10194-00-0 27564-01-8 82530-60-7
 (stabilization of PVC against ionizing radiation by)

RN 10194-00-0 ZCAPLUS
 CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



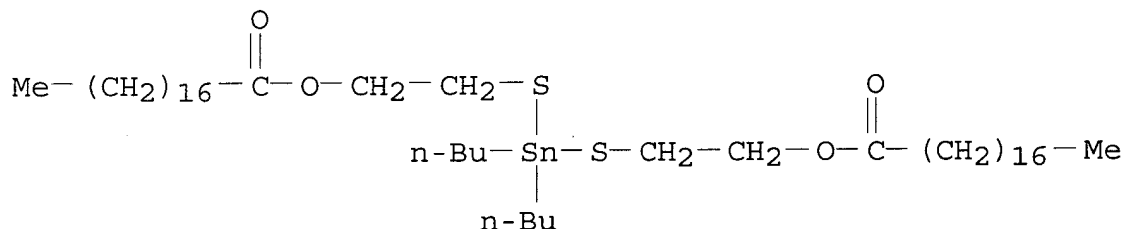
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



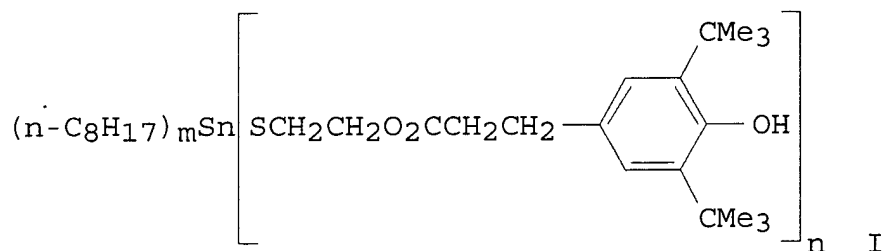
IT 10194-00-0 27564-01-8 82530-60-7

(stabilization of PVC against ionizing radiation by)

L26 ANSWER 19 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:407227 Document No. 97:7227 Metal mercaptides of esters of .beta.-mercapto alkanols, their use as stabilizers and organic materials stabilized therewith. Knobloch, Gerrit; Wehner, Wolfgang; Wirth, Hermann O. (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP 34118 A2 19810819, 23 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (German). CODEN: EPXXDW. APPLICATION: EP 1981-810027 19810202. PRIORITY: CH 1980-1036 19800208.

GI



AB Metal mercaptides of mercaptoalkanol esters of sterically hindered hydroxyphenylalkanecarboxylic acids are useful stabilizers for Cl-contg. thermoplastics, elastomers, and lubricants. Thus, 8.4 g NaHCO₃ was added to a soln. of di-n-octyltin dichloride [3542-36-7] and 23.7 g .beta.-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid 2-mercaptoethyl ester [27568-68-9] in 100 mL CHCl₃. The water formed in the reaction was azeotropically distd. and the reaction soln. was filtered and evapd. in vacuo to give 36.4 g mercaptide with the structure I (m = 2; n = 2) [80048-75-5]. PVC [9002-86-2] (100 Parts) contg. montanic acid ester 0.2, Castor oil 1, and I) (m = 1, n = 3) [80048-76-6] was blended at 180.degree. and rolled at 200.degree.. The yellowness index of the compn. was 4.8, 6.0, 7.8, 9.3, 12.6, and 22.6 after 3, 6, 9, 12, 15, and 18 min, resp.

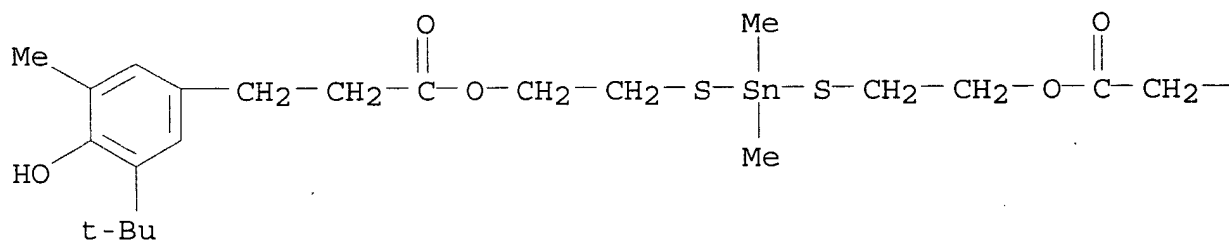
IT 80048-71-1 80048-72-2 80048-73-3
80048-74-4 80048-75-5 80048-76-6
80822-84-0

(heat stabilizers, for chlorine-contg. thermoplastics, rubbers and lubricants)

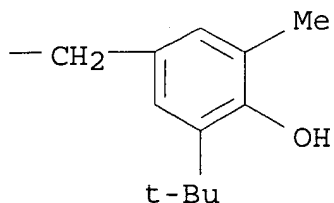
RN 80048-71-1 ZCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-methyl-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



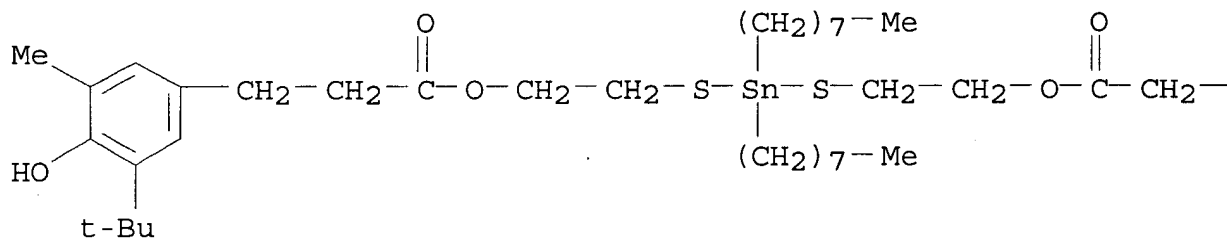
PAGE 1-B



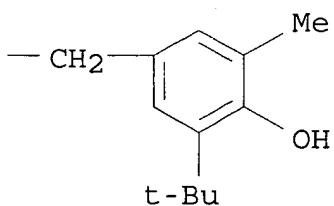
RN 80048-72-2 ZCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-methyl-,
(dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
NAME)

PAGE 1-A



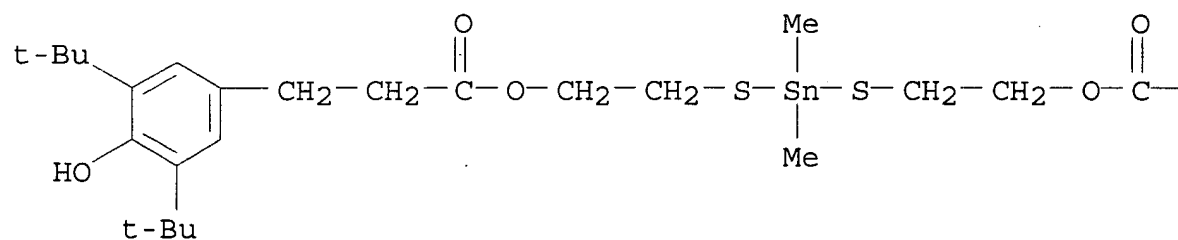
PAGE 1-B



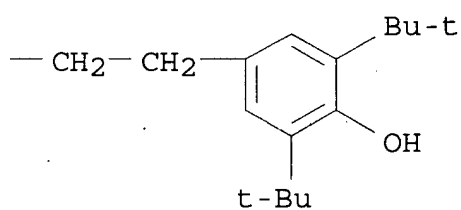
RN 80048-73-3 ZCAPLUS

CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
(dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
NAME)

PAGE 1-A

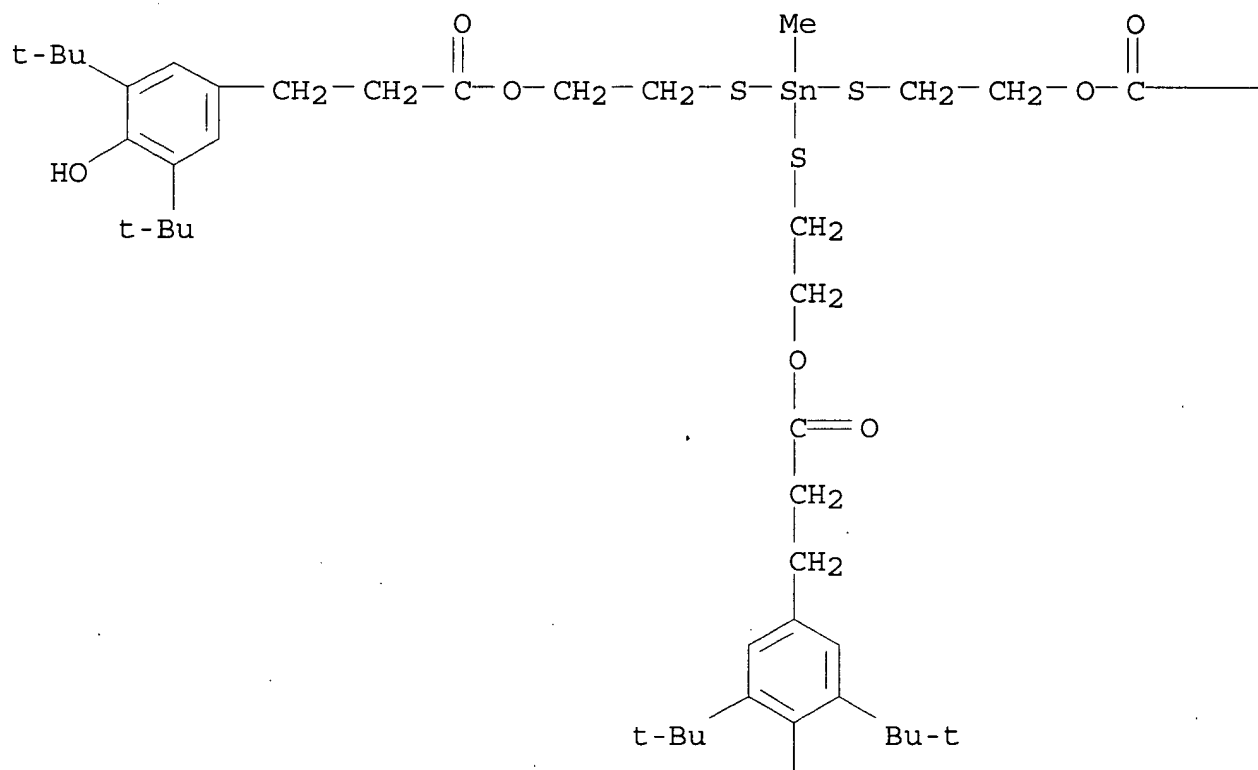


PAGE 1-B

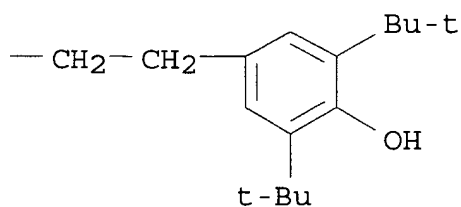


RN 80048-74-4 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A



PAGE 1-B



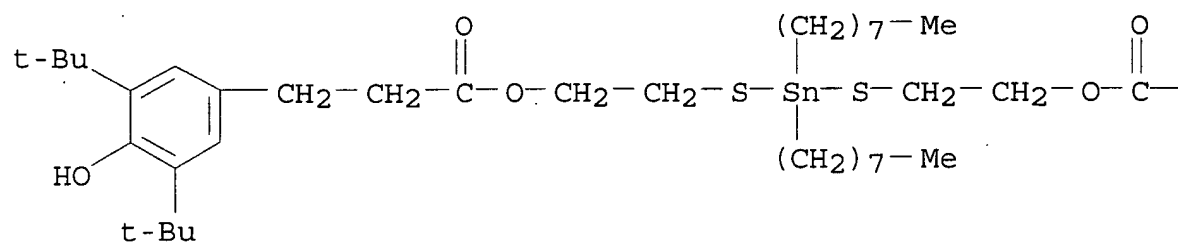
PAGE 2-A

OH

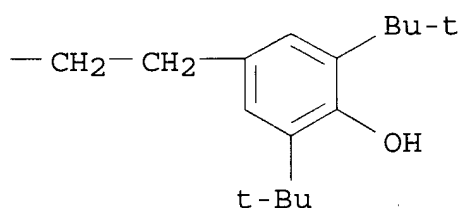
RN 80048-75-5 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX

NAME)

PAGE 1-A

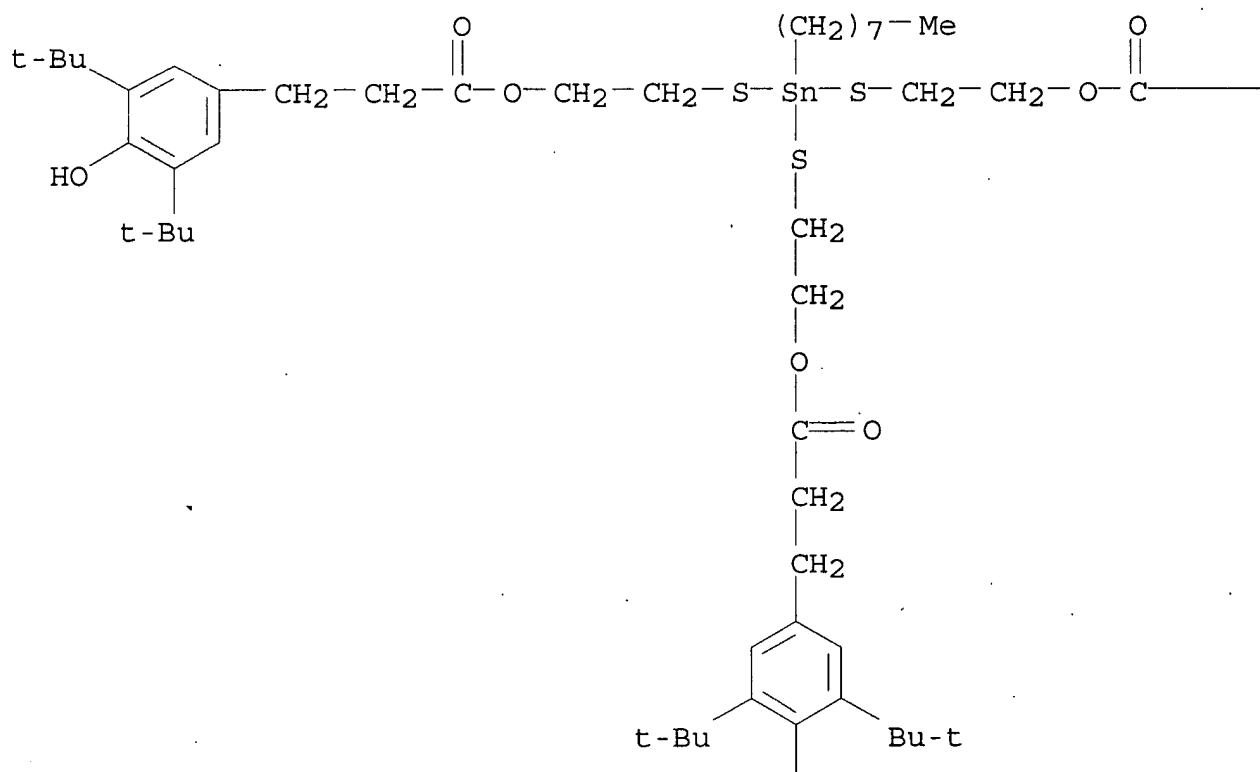


PAGE 1-B

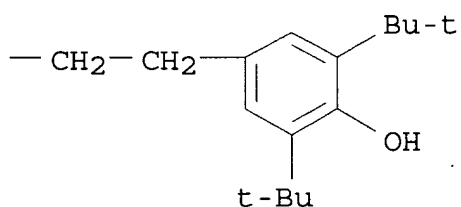


RN 80048-76-6 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (octylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A



PAGE 1-B

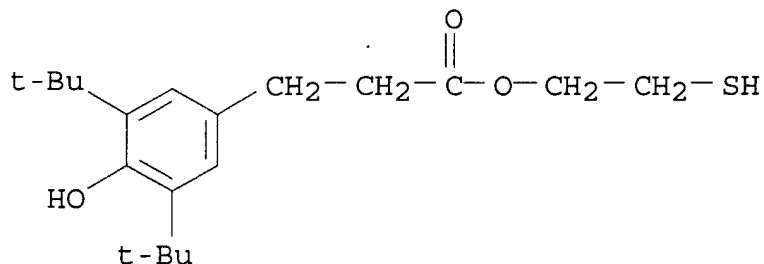


PAGE 2-A

OH

RN 80822-84-0 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 2-mercaptoethyl ester, antimony(3+) salt (3:1) (9CI) (CA INDEX

NAME)

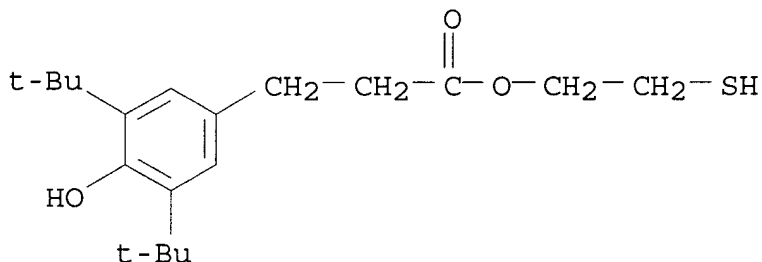


● 1/3 Sb(III)

IT 27568-68-9

(reaction of, with metal compds.)

RN 27568-68-9 ZCAPLUS

CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
2-mercaptoethyl ester (9CI) (CA INDEX NAME)

IT 80048-71-1 80048-72-2 80048-73-3

80048-74-4 80048-75-5 80048-76-6

80822-84-0

(heat stabilizers, for chlorine-contg. thermoplastics, rubbers
and lubricants)

IT 27568-68-9

(reaction of, with metal compds.)

L26 ANSWER 20 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

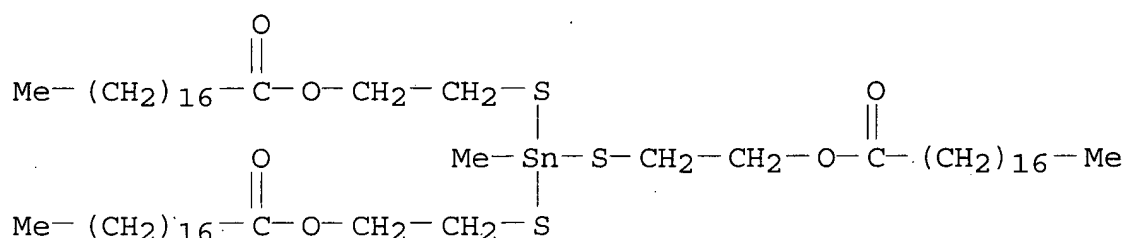
1982:36257 Document No. 96:36257 Thermal stabilization compositions
for halogenated resins. Bohen, J. M. (Pennwalt Corp., USA). Belg.
BE 888346 A1 19810731, 35 pp. (French). CODEN: BEXXAL.
APPLICATION: BE 1981-204426 19810409. PRIORITY: US 1980-128606
19800310.

AB (Iso-C8H17O2CCH2S)2SnMe2 (I) [26636-01-1] or

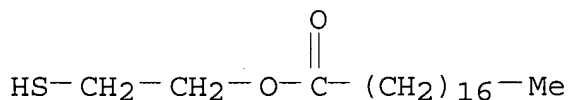
(C17H35CO2CH2CH2S)3SnMe [59118-76-2],

(iso-C8H17O2CCH2S)4Sn (II) [62568-17-6] or (C17H35CO2CH2CH2S)4Sn [

IT	59118-76-2 69128-10-5 80233-79-0
	(heat stabilizers, for PVC)
RN	59118-76-2 ZCAPLUS
CN	Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN	69128-10-5	ZCAPLUS	
CN	Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI)	(CA	
	INDEX NAME)		

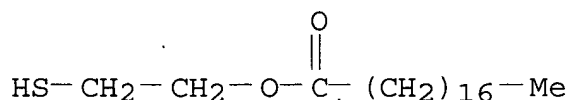


● 1/2 Ba

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RN      80233-79-0  ZCAPLUS
CN      Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI)  (CA
INDEX NAME)

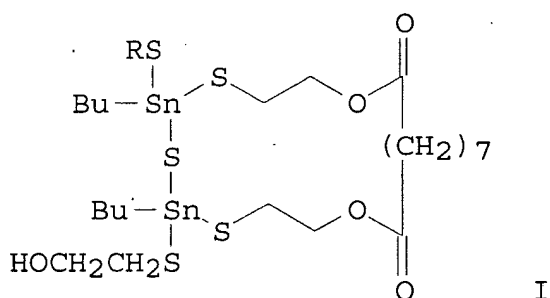
```


$$\frac{1}{4} \text{ Sn (IV)}$$

IT 59118-76-2 69128-10-5 80233-79-0
(heat stabilizers, for PVC)

L26 ANSWER 21 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1981:47482 Document No. 94:47482 Organotin compounds and resins or
polymers stabilized with them. Dworking, Robert Dally; Larkin,
William Albert (M and T Chemicals Inc., USA). Eur. Pat. Appl. EP
11456 19800528, 101 pp. (English). CODEN: EPXXDW. APPLICATION: EP
1979-302520 19791109.

GI



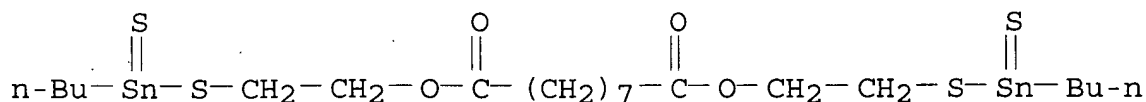
AB Approx. 20 organotin sulfide esters were prepd. by various
procedures. Thus, 0.4 mol BuSnCl₃, 0.8 mol NH₄OH, 0.2 mol
HSCH₂CH₂OH, 0.2 mol Me(CH₂)₁₁SH, 0.2 mol
HSCH₂CH₂O₂C(CH₂)₇CO₂CH₂CH₂SH, and 233 mol H₂O, was heated to
70.degree. 0.5 h by 0.2 mol Na₂S addn., the mixt. heated at
75.degree. 0.5 h, and the pH adjusted to 7 with NH₄OH to give 88 g I
(R = n-dodecyl). Also prepd. were [(BuSn(S)SCH₂CH₂O)]₄M (M = Si,
Ti), [BuSn(S)SCH₂CH₂O)]₃M (M = B, P, Al), and I (R =
CH₂CO₂(CH₂)₅CHMe₂). The compds. prepd. were useful as heat
stabilizers for halogenated polymers such as PVC.

IT 76192-56-8P 76207-93-7P 76207-96-0P

(prepn. and activity as heat stabilizer for polymers)

RN 76192-56-8 ZCAPLUS

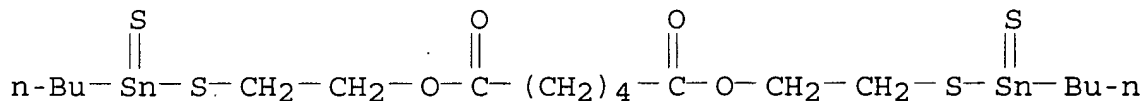
CN Nonanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)



RN 76207-93-7 ZCAPLUS

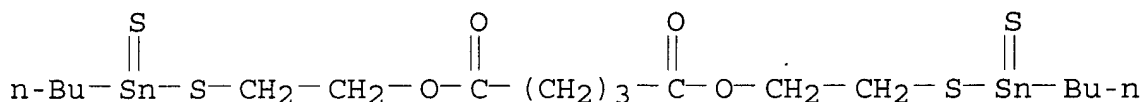
CN Hexanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)

(CA INDEX NAME)



RN 76207-96-0 ZCAPLUS

CN Pentanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI) (CA INDEX NAME)

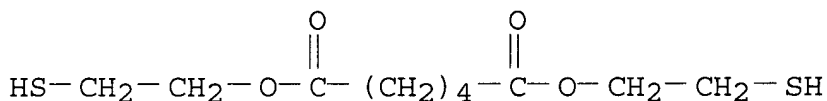


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

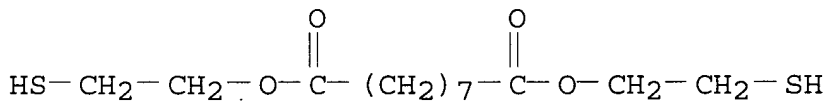
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 76192-56-8P 76207-93-7P 76207-96-0P

(prepn. and activity as heat stabilizer for polymers)

IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

L26 ANSWER 22 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1979:104943 Document No. 90:104943 Stabilizers for polymer compositions. Kugele, Thomas Gordon (Cincinnati Milacron Chemicals, Inc., USA). Belg. BE 864976 19780717, 29 pp. (French). CODEN: BEXXAL. APPLICATION: BE 1978-186002 19780316.

AB Organotin sulfides or polysulfides prepd. from 2-mercaptoethyl caprylate (I), Na₂S, and acetylacetonyltin trichloride [69138-80-3], from I, Na₂S, bis(3-oxobutyl)tin dichloride, and 3-oxobutyltin trichloride (II), from 2-mercaptoethyl oleate (III) [

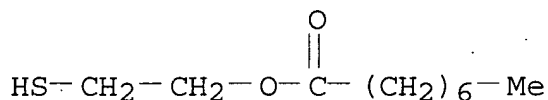
59118-78-4], Na₂S₂, and 4-oxopentyltin trichloride [69242-48-4], from isooctyl thioglycolate [25103-09-7], Na₂S, and II, or from similar compds. are useful as heat stabilizers for polymers such as PVC [9002-86-2]. Thus, III, NaS, and MeO₂CCH₂CH₂SnCl₃ [59586-13-9] were used to prep. [(ROCH₂CH₂S)₂(MeO₂CCH₂CH₂)Sn]₂S (R = oleoyl) [69242-50-8] which was used as a heat stabilizer in PVC.

IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide

(heat stabilizers, for PVC)

RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 69242-47-3P

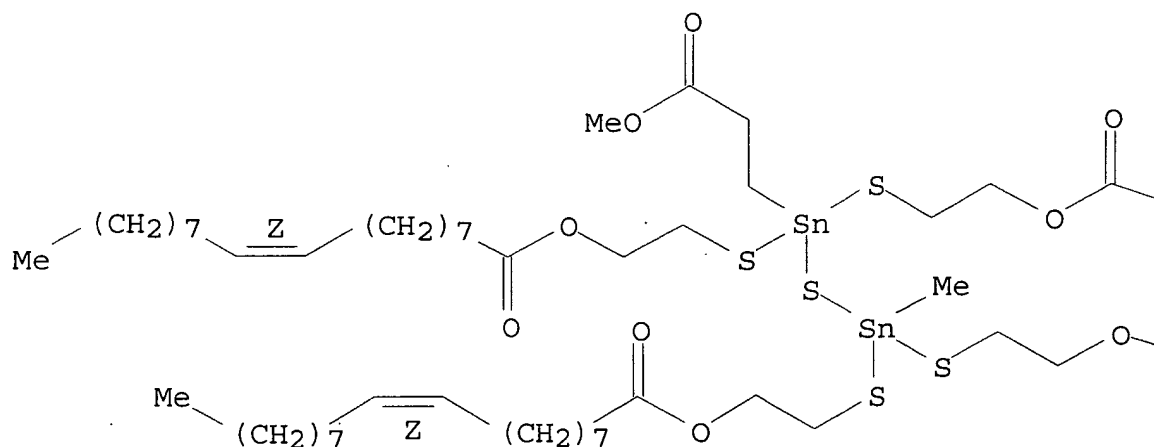
(manuf. of, as heat stabilizers for PVC)

RN 69242-47-3 ZCAPLUS

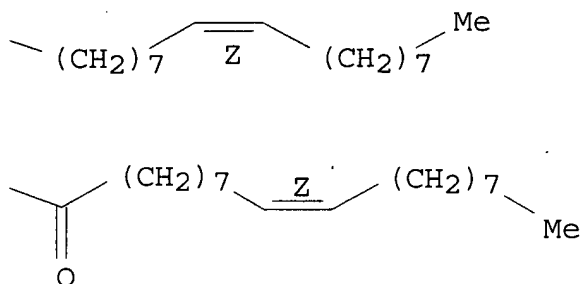
CN 9-Octadecenoic acid (9Z)-, [1-(3-methoxy-3-oxopropyl)-3-methyl-1,3-distannathianediylidene]tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



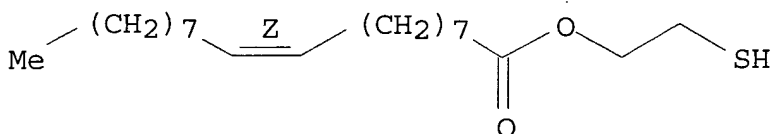
IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide

(heat stabilizers, for PVC)

IT 69242-47-3P

(manuf. of, as heat stabilizers for PVC)

IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

L26 ANSWER 23 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1979:72863 Document No. 90:72863 Heat stabilizer composition for halogenated resins. Bohen, Joseph Michael; Toukan, Sameeh Said (Pennwalt Corp., USA). U.S. US 4115352 19780919, 11 pp. (English). CODEN: USXXAM. APPLICATION: US 1977-799862 19770523.

AB Mixts. of an alkali or alk. earth metal salt (prepd. from the metal alkoxide) of a mercaptan or mercapto acid with a S-contg. organotin or mercury compd. (and optionally an overbased org. complex of an alk. earth metal carbonate) are synergistic heat stabilizers for PVC [9002-86-2]. Thus, 100 parts PVC contg. 1.5 parts dibutyltin bis(isooctyl thioglycolate) (I) [25168-24-5] and 1.5 parts barium

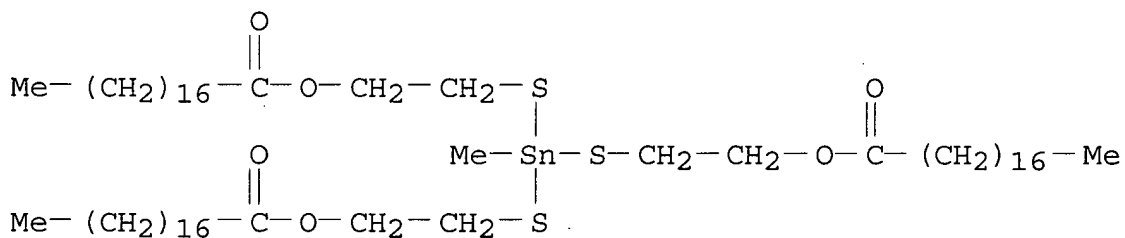
bis(isooctyl thioglycolate) (II) [66368-81-8] [prepd. from Ba(OMe)₂ [2914-23-0]] plus the usual processing aids and additives had heat failure time (415.degree.) on a Brabender plastograph 37 min, compared to 20 or 4 min for PVC contg. only I or II, resp.

IT 59118-76-2

(heat stabilizers, contg. alkali or alk. earth mercaptides, for PVC)

RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



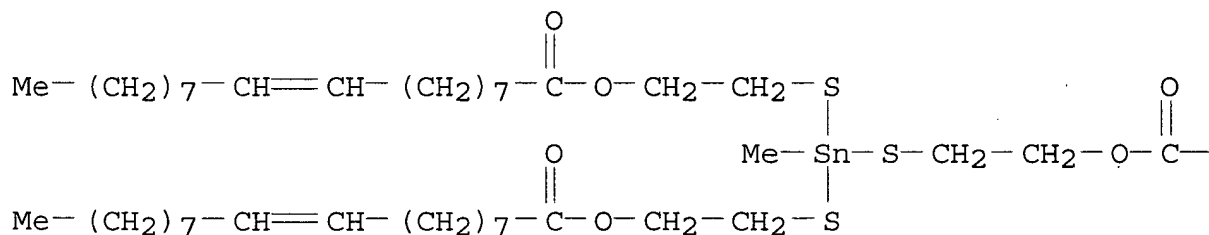
IT 59118-79-5

(heat stabilizers, contg. barium carbonate overbased org. complex and barium bis(mercaptoethyl oleate), for PVC)

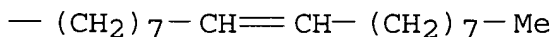
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

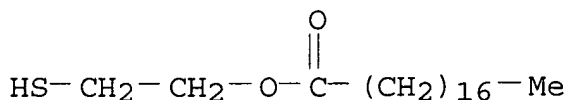


PAGE 1-B



IT 69128-10-5

(heat stabilizers, contg. organotin or mercury compds., for PVC)
 RN 69128-10-5 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



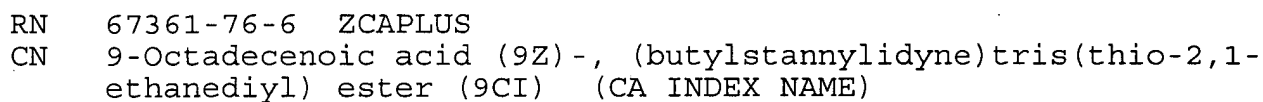
● 1/2 Ba

IT 59118-76-2
 (heat stabilizers, contg. alkali or alk. earth mercaptides, for PVC)
 IT 59118-79-5
 (heat stabilizers, contg. barium carbonate overbased org. complex and barium bis(mercaptoethyl oleate), for PVC)
 IT 69128-10-5
 (heat stabilizers, contg. organotin or mercury compds., for PVC)

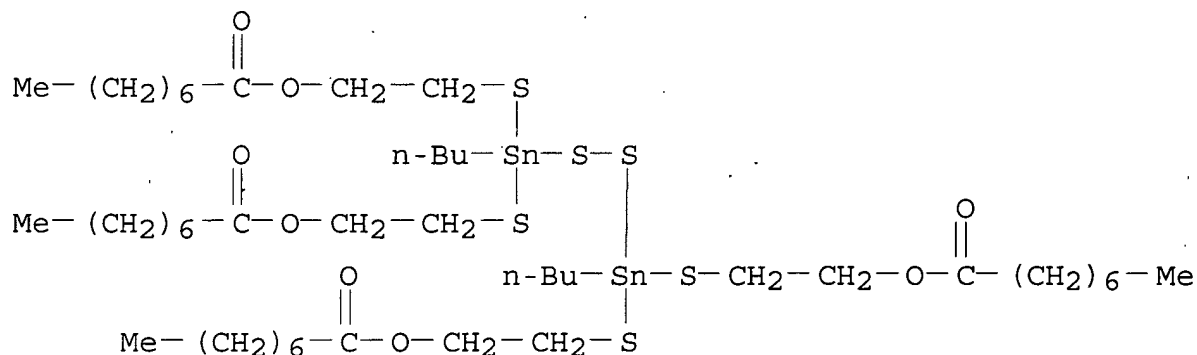
L26 ANSWER 24 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1978:509971 Document No. 89:109971 Organotin compounds. Dworkin, Robert Dally; Ejck, Adam Joseph (M and T Chemicals, Inc., USA). Ger. Offen. DE 2749082 19780511, 19 pp. (German). CODEN: GWXXBX.
 APPLICATION: DE 1977-2749082 19771102.

AB The title compds., $\text{RqSn}[\text{S}(\text{CH}_2)_m\text{O}_2\text{CR}_1]_4\text{-q}$ [R, R1 = C1-20 alkyl, cycloalkyl, aryl, aralkyl, alkaryl; m = 2, 3; q = 1-2], useful as polymer stabilizers, were prepd. Thus, 0.1 mol BuSnCl_3 , 0.3 mol $\text{HSCH}_2\text{CH}_2\text{OH}$, and 43.3 g caprylic acid gave 93% $\text{BuSn}[\text{SCH}_2\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_6\text{Me}]_3$. Similarly prepd. were (Z)- $\text{BuSn}[\text{SCH}_2\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_7\text{CH}:\text{CH}(\text{CH}_2)_7\text{Me}]_3$ and $\text{S}[\text{SnBu}(\text{SCH}_2\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_6\text{Me})_2]_2$.

IT 59118-80-8P 67361-76-6P 67395-86-2P
 (prepn. of)
 RN 59118-80-8 ZCAPLUS
 CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)


$$\begin{array}{c} \text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\ | \\ \text{n-Bu}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}\text{C}- \\ | \\ \text{Me}-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array}$$
$$-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{Me}$$

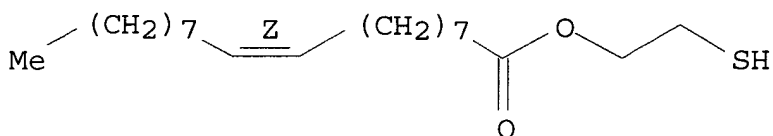
RN	67395-86-2	ZCAPLUS
CN	Octanoic acid, 4,7-dibutyl-4,7-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,6,8-tetrathia-4,7-distannadecane-1,10-diyl ester (9CI) (CA INDEX NAME)	



(reaction with alkylhalostannanes)

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

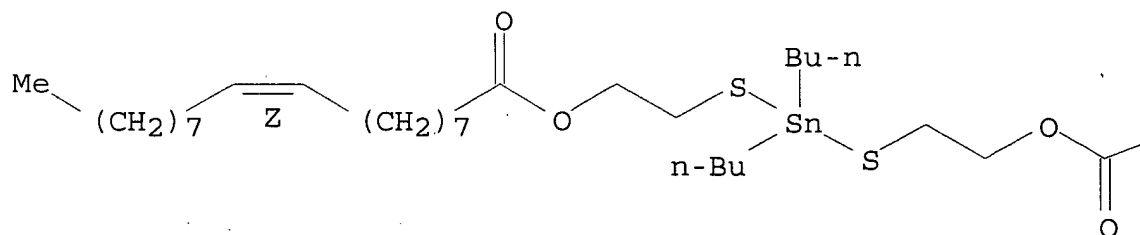


(stabilizer for polyvinylchloride)

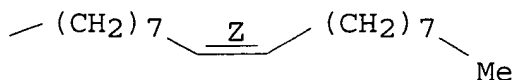
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 59118-80-8P 67361-76-6P 67395-86-2P
(prepn. of)

IT 59118-78-4
(reaction with alkylhalostannanes)

IT 67361-77-7
(stabilizer for polyvinylchloride)

L26 ANSWER 25 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1976:479039 Document No. 85:79039 Sulfur-containing organotin
compounds. Kugele, Thomas G.; Koeniger, Arthur F. (Cincinnati
Malacron Chemicals, Inc., USA). Ger. Offen. DE 2550507 19760520, 47
pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2550507
19751111.

AB Compds. (23) such as (ROCH₂CH₂S)₂SnMeR₁SnMe(SCH₂CH₂OR)₂ (I) with R =
octanoyl, oleoly, or octadecyl and R₁ = SCH₂CH₂O₂C(CH₂)₄CO₂CH₂CH₂S,
SCH₂CH₂O₂CCH₂CH₂S, O₂CCH:CHCO₂ (cis), SCH₂CH₂S, or similar group
were prepd. for use as heat stabilizers in PVC [9002-86-2]. Thus,
0.5 mole MeSnCl₃ [993-16-8] in water was treated with 1 mole
HSCH₂CH₂O₂C(CH₂)₇H [57813-59-9], aq. NaOH, 0.25 mole
bis(2-mercaptoethyl) adipate [15196-22-2], and aq NaOH to
prepare I (R = octanoyl, R₁ = SCH₂CH₂O₂C(CH₂)₄CO₂CH₂CH₂S) (II) [
59970-58-0]. PVC contg. II had better heat stability than
PVC contg. the organotin isooctyl thioglycolate.

IT 59119-11-8 59970-53-5 59970-54-6
59970-55-7 59970-56-8 59970-57-9
59970-58-0 59970-60-4 59970-61-5
59970-62-6 59970-63-7 59970-64-8
59970-65-9 59970-66-0 59970-67-1
59970-68-2 59970-69-3 59970-70-6
59970-71-7 59970-72-8 59970-74-0
60003-88-5 60003-89-6

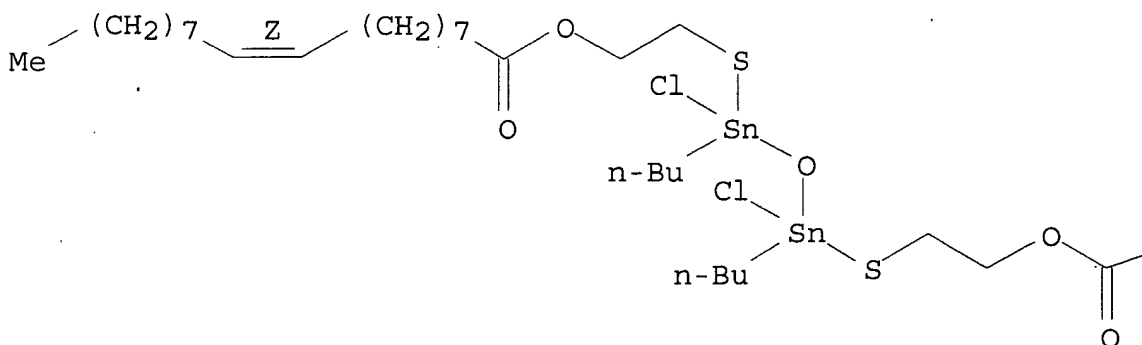
(heat stabilizers, for PVC)

RN 59119-11-8 ZCAPLUS

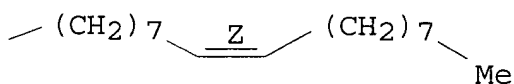
CN 9-Octadecenoic acid (9Z)-, (1,3-dibutyl-1,3-dichloro-1,3-
distannoxanediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
NAME)

Double bond geometry as shown.

PAGE 1-A

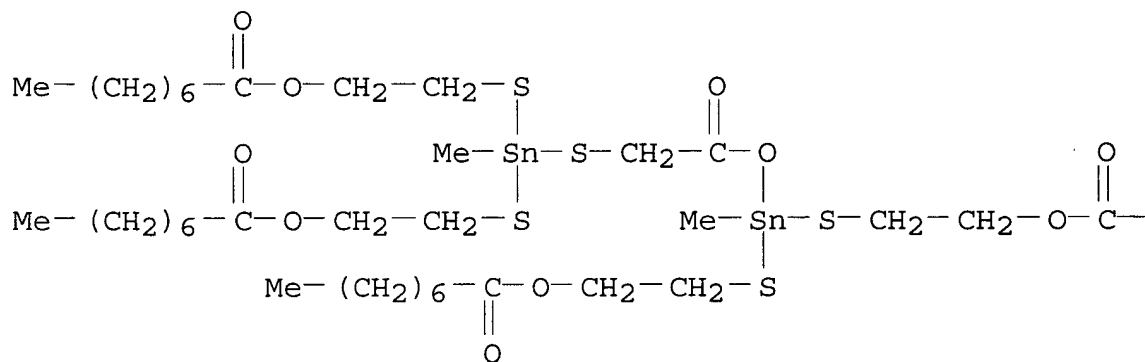


PAGE 1-B



RN 59970-53-5 ZCAPLUS
 CN Octanoic acid, 4,9-dimethyl-6-oxo-4,9-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-5-oxa-3,10-dithia-4,9-distannadodecane-1,12-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

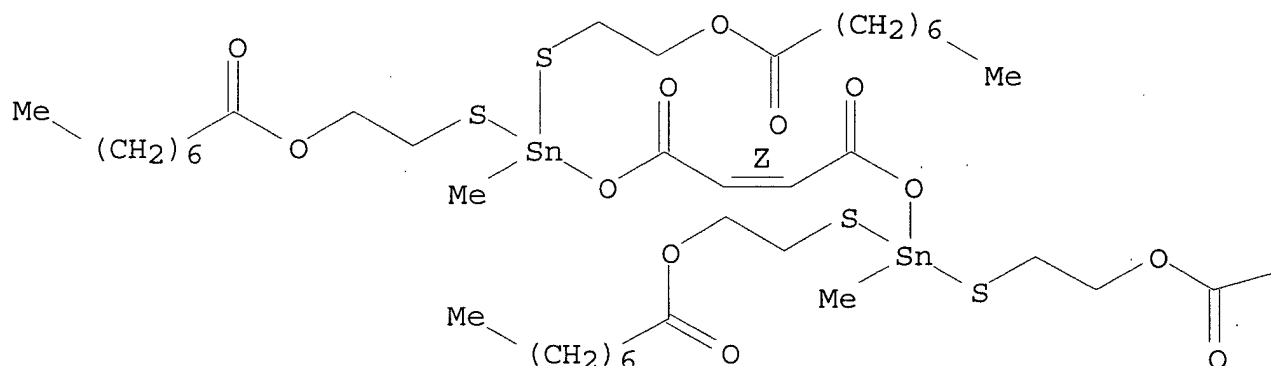
— (CH₂)₆—Me

RN 59970-54-6 ZCAPLUS

CN Octanoic acid, 4,11-dimethyl-6,9-dioxo-4,11-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-5,10-dioxo-3,12-dithia-4,11-distannatetradec-7-ene-1,14-diyl ester, (Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



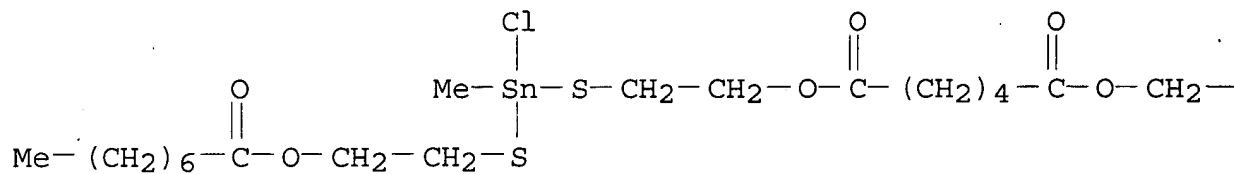
PAGE 1-B

— (CH₂)₆—Me

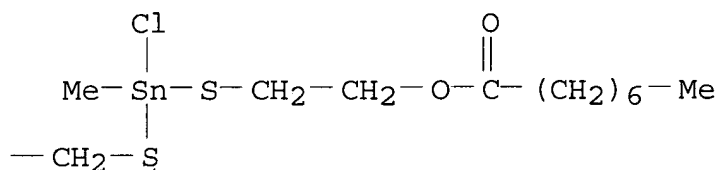
RN 59970-55-7 ZCAPLUS

CN Hexanedioic acid, bis(4-chloro-4-methyl-9-oxo-8-oxa-3,5-dithia-4-stanna-hexadec-1-yl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

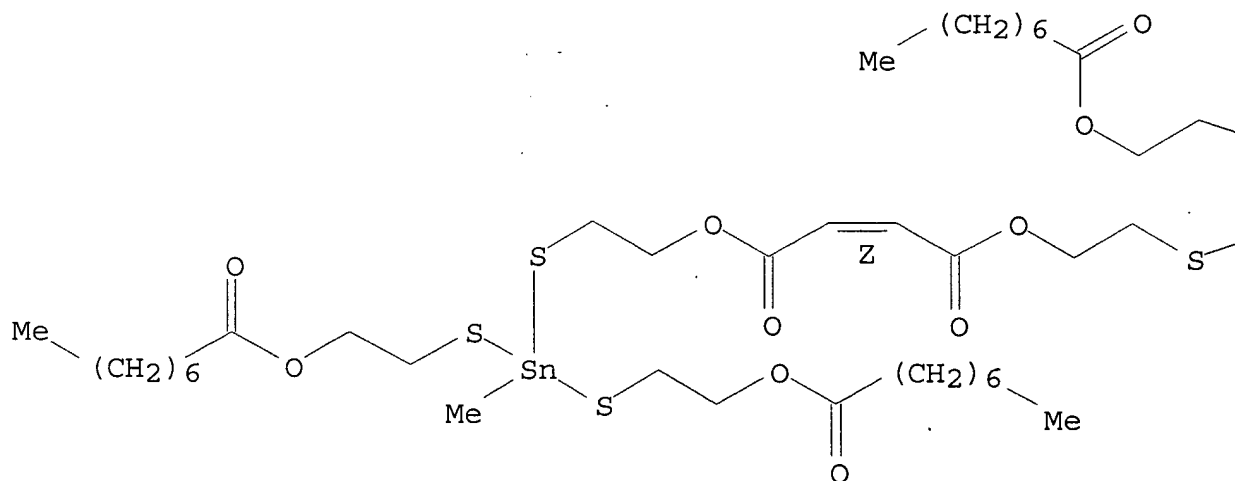


RN 59970-56-8 ZCAPLUS

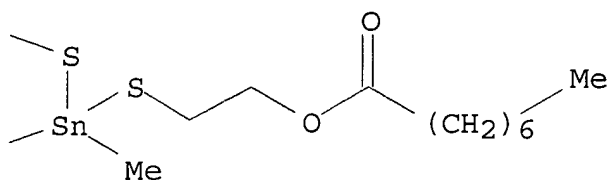
CN 2-Butenedioic acid (2Z)-, bis[4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl] ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



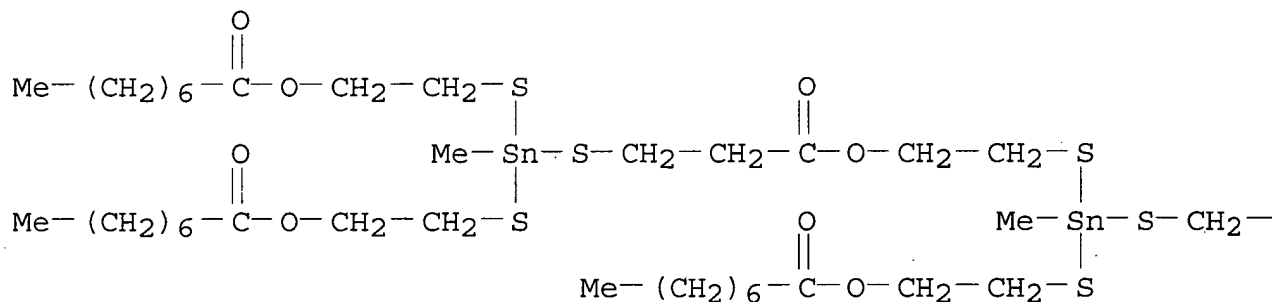
PAGE 1-B



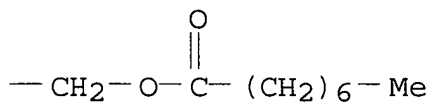
RN 59970-57-9 ZCAPLUS

CN 9-Oxa-4,6-dithia-5-stannaheptadecanoic acid, 5-methyl-10-oxo-5-[[2-[(1-oxooctyl)oxy]ethyl]thio]-, 4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannaheptadec-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



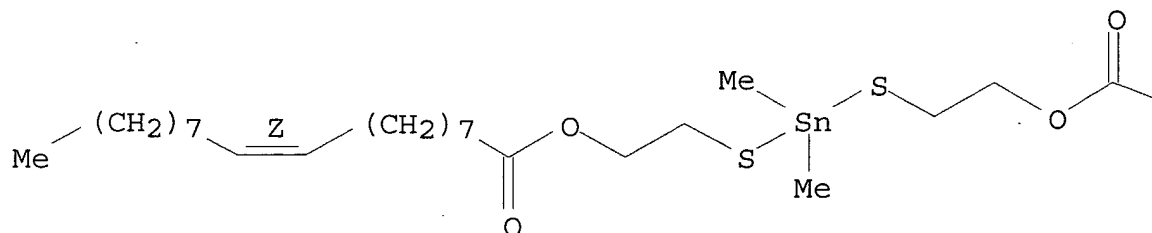
RN 59970-58-0 ZCAPLUS

CN Hexanedioic acid, bis[4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannaheptadec-1-yl] ester (9CI) (CA INDEX NAME)

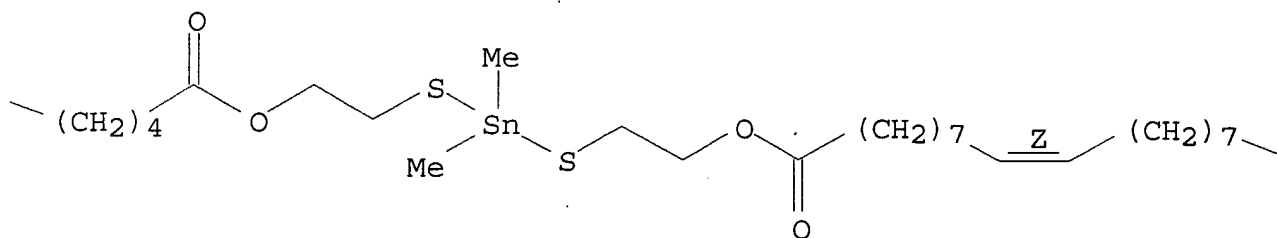
$$\begin{array}{c}
 \text{O} \\
 \parallel \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 \text{O} \qquad \qquad \qquad \text{O} \qquad \qquad \qquad \text{O} \\
 \parallel \qquad \qquad \qquad \parallel \qquad \qquad \qquad \parallel \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \quad \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}-(\text{CH}_2)_4-\text{C}-\text{O}-\text{CH}_2- \\
 \qquad \qquad \qquad \text{O} \qquad \qquad \qquad \text{O} \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S}
 \end{array}$$
$$\begin{array}{c} \text{---CH}_2\text{---S} \\ | \\ \text{Me---Sn---S---CH}_2\text{---CH}_2\text{---O---C(=O)---(CH}_2\text{)}_6\text{---Me} \\ | \\ \text{---CH}_2\text{---S} \end{array}$$

CN Hexanedioic acid, bis(4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl) ester, (Z,Z) - (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



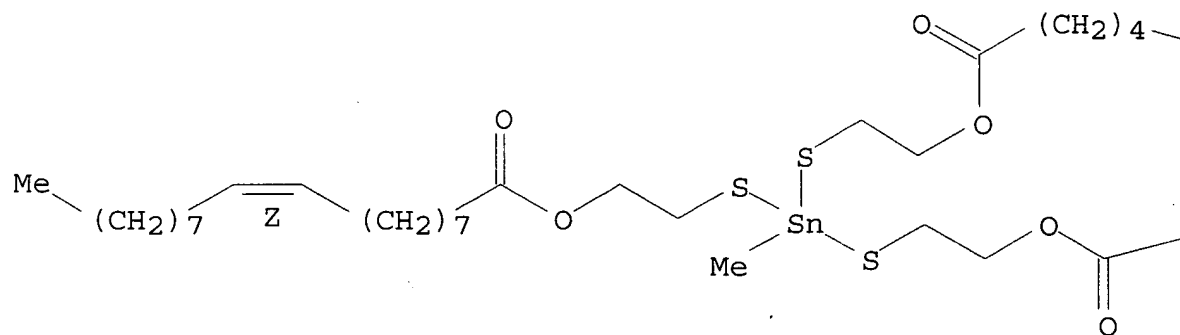
PAGE 1-C

Me

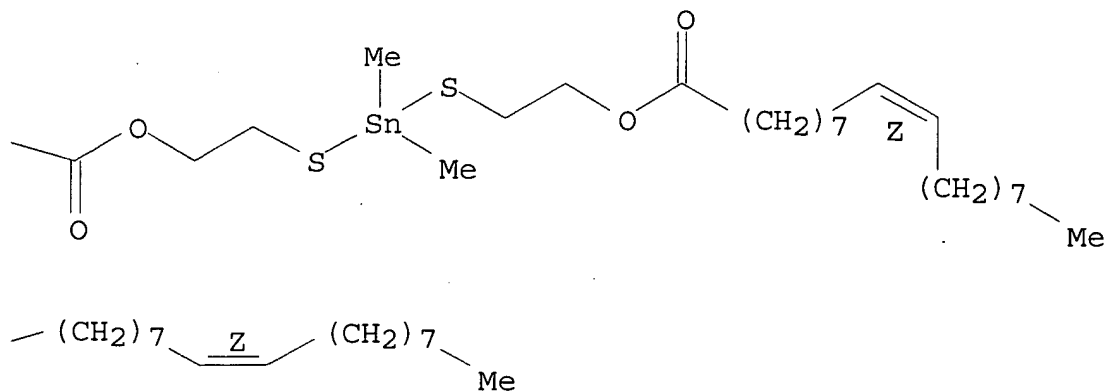
RN 59970-61-5 ZCAPLUS
 CN Hexanedioic acid, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannaheacos-17-en-1-yl 4-methyl-9-oxo-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannaheacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

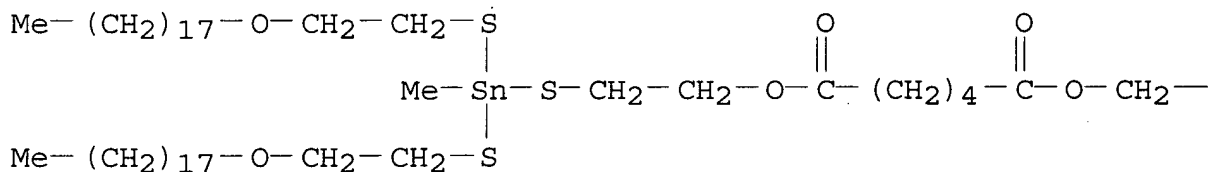


PAGE 1-B

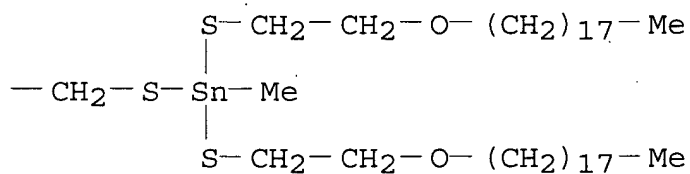


RN 59970-62-6 ZCAPLUS
 CN Hexanedioic acid, bis[4-methyl-4-[[2-(octadecyloxy)ethyl]thio]-8-oxa-3,5-dithia-4-stannaheptacos-1-yl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

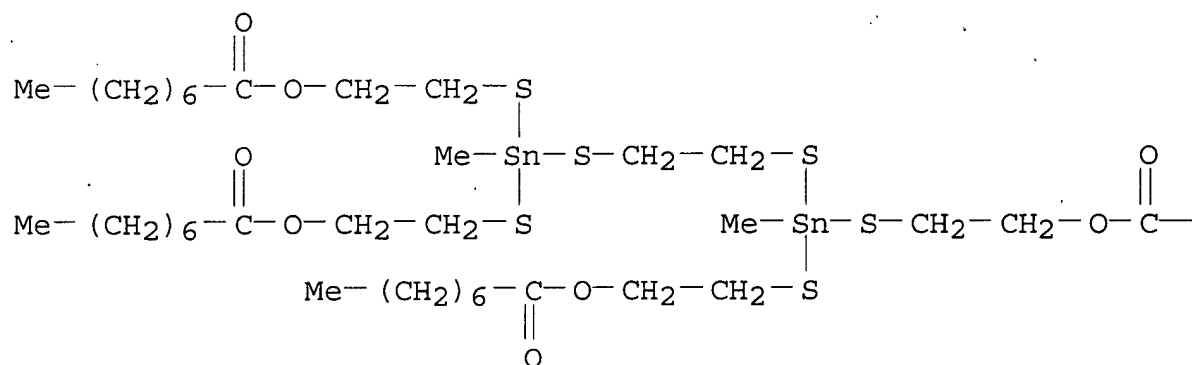


RN 59970-63-7 ZCAPLUS
 CN Hexanedioic acid, bis[4-[[2,3-bis[(1-oxooctyl)oxy]propyl]thio]-4-methyl-10-oxo-7-[(1-oxooctyl)oxy]-9-oxa-3,5-dithia-4-stannaheptadec-1-yl] ester (9CI) (CA INDEX NAME)

$$\begin{array}{c}
 \text{Me}-(\text{CH}_2)_6-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\underset{\text{O}-\overset{\text{O}}{\parallel}\text{C}-(\text{CH}_2)_6-\text{Me}}{\text{CH}}-\text{CH}_2-\text{S} \\
 \text{Me}-(\text{CH}_2)_6-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\underset{\text{Me}-(\text{CH}_2)_6-\overset{\text{O}}{\parallel}\text{C}-\text{O}}{\text{CH}}-\text{CH}_2-\text{S} \\
 \text{Me}-(\text{CH}_2)_6-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{CH}_2-\underset{\text{O}-\overset{\text{O}}{\parallel}\text{C}-(\text{CH}_2)_4-\overset{\text{O}}{\parallel}\text{C}-\text{O}-\text{Me}}{\text{CH}}-\text{CH}_2-\text{S}
 \end{array}$$
$$\begin{array}{c}
 \text{O} \\
 \parallel \\
 \text{---O---Me---(CH}_2\text{)}_6\text{---C---O---CH}_2 \\
 | \\
 \text{---CH---CH}_2\text{---S} \\
 | \qquad \qquad | \\
 \text{Me---Sn---S---CH}_2\text{---CH---O---C---(CH}_2\text{)}_6\text{---Me} \\
 \parallel \\
 \text{O} \\
 | \\
 \text{---CH}_2\text{---CH}_2\text{---S}
 \end{array}$$

CN	Octanoic acid, 4,9-dimethyl-4,9-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,8,10-tetrathia-4,9-distannadodecane-1,12-diyl ester (9CI) (CA INDEX NAME)
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PAGE 1-A

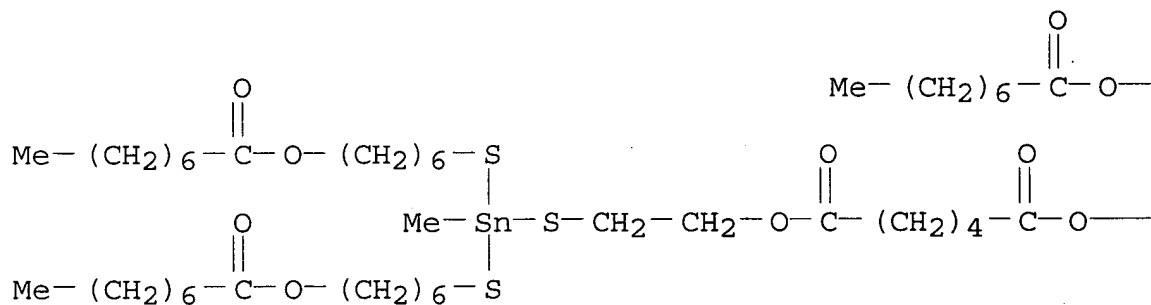


PAGE 1-B

— (CH₂)₆—Me

RN 59970-65-9 ZCAPLUS
 CN Hexanedioic acid, bis[4-methyl-13-oxo-4-[[6-[(1-oxooctyl)oxy]hexyl]thio]-12-oxa-3,5-dithia-4-stannaeicos-1-yl] ester (9CI) (CA INDEX NAME)

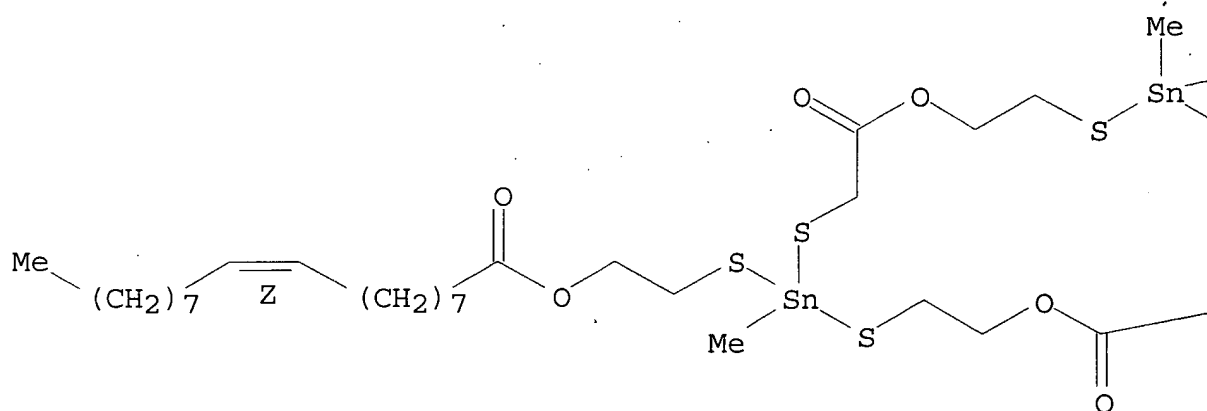
PAGE 1-A



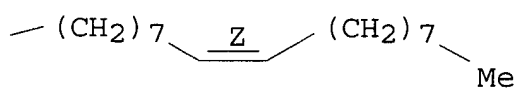
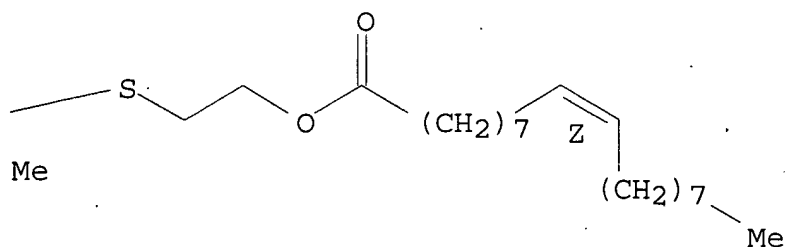
$$\begin{array}{c} \text{---} (\text{CH}_2)_6 \text{---} \text{S} \\ | \\ \text{Me---Sn---S---} (\text{CH}_2)_6 \text{---O---C---} (\text{CH}_2)_6 \text{---Me} \\ || \\ \text{O} \\ | \\ \text{---CH}_2\text{---CH}_2\text{---S} \end{array}$$

CN 8-Oxa-3,5-dithia-4-stannahexacos-17-enoic acid, 4-methyl-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

PAGE 1-A



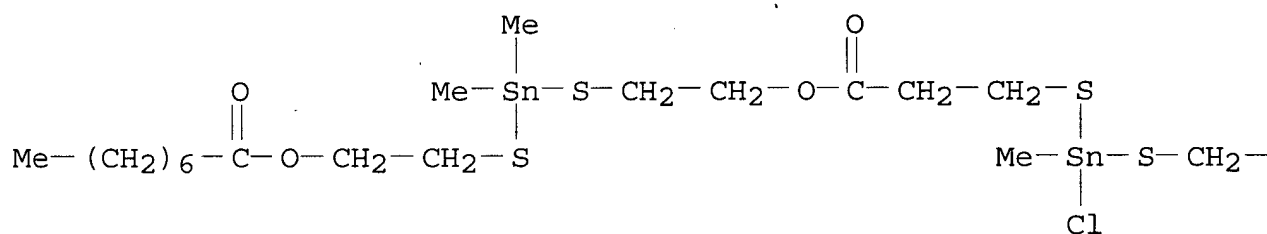
PAGE 1-B



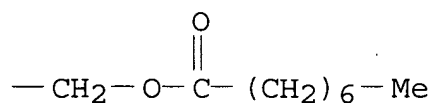
RN 59970-67-1 ZCAPLUS

CN 9-Oxa-4,6-dithia-5-stannaheptadecanoic acid, 5-chloro-5-methyl-10-oxo-, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannaheptadec-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



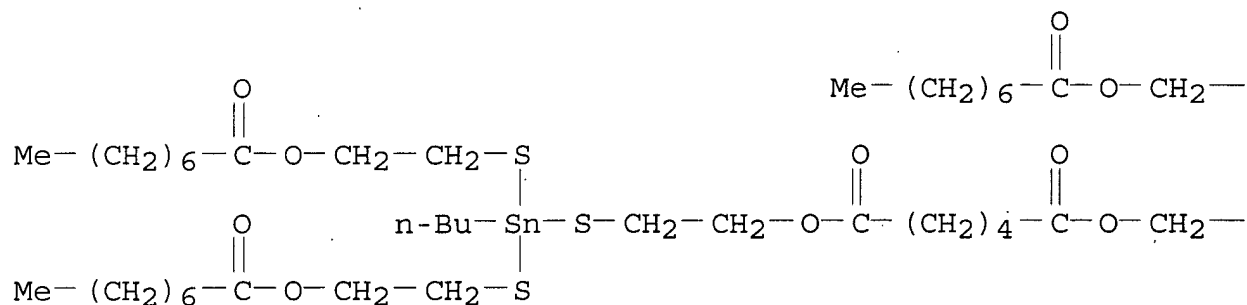
PAGE 1-B



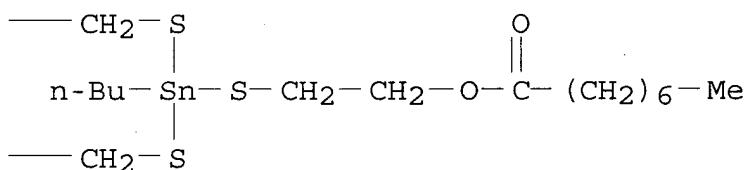
RN 59970-68-2 ZCAPLUS

CN Hexanedioic acid, bis[4-butyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannaheptadec-1-yl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

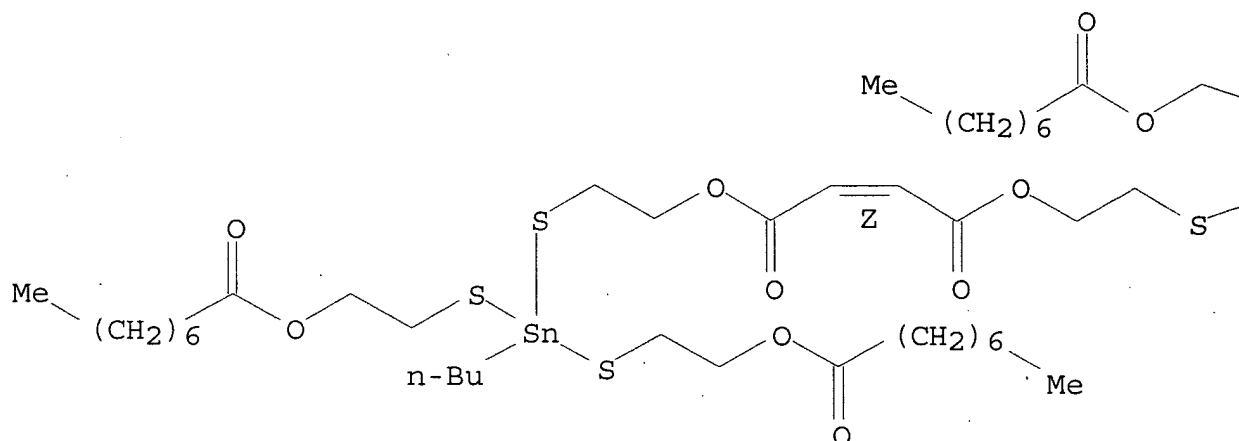


RN 59970-69-3 ZCAPLUS

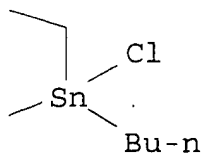
CN 2-Butenedioic acid (2Z)-, 4-butyl-4-chloro-9-oxo-8-oxa-3,5-dithia-4-stannahexadec-1-yl 4-butyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

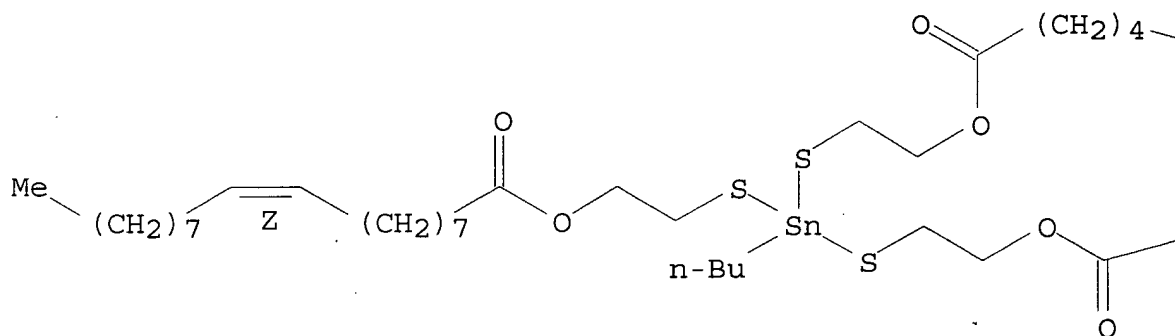


RN 59970-70-6 ZCAPLUS

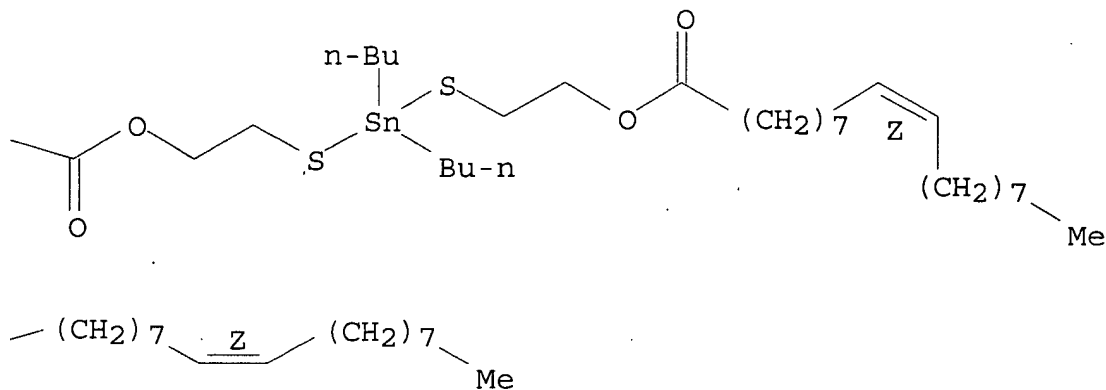
CN Hexanedioic acid, 4-butyl-9-oxo-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl 4,4-dibutyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

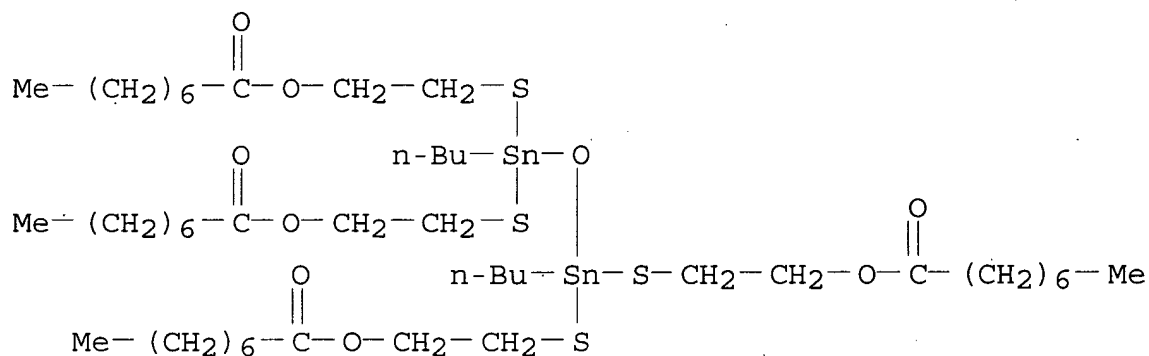


PAGE 1-B



RN 59970-71-7 ZCAPLUS

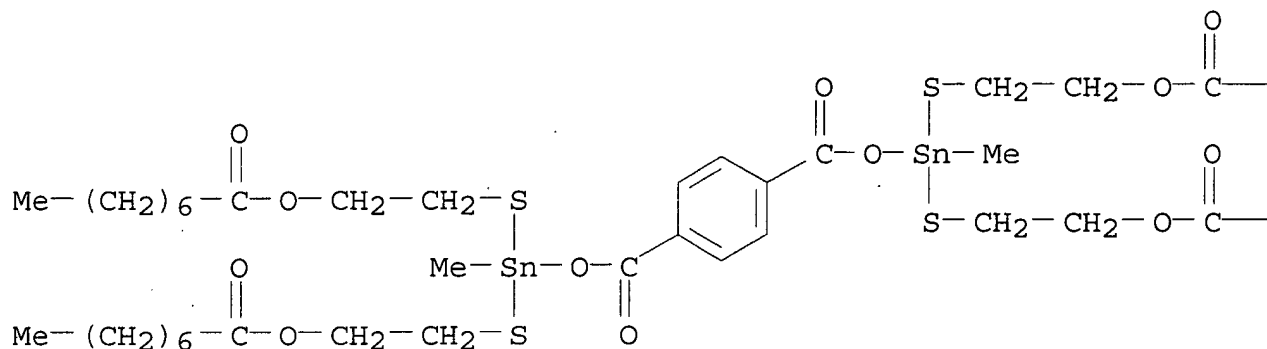
CN Octanoic acid, (1,3-dibutyl-1,3-distannoxanediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59970-72-8 ZCAPLUS

CN Octanoic acid, 1,4-phenylenebis[carbonyloxy(methylstannylidyne)bis(thio-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

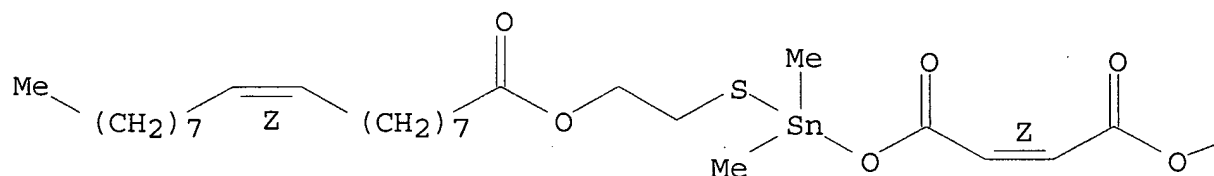
— (CH₂)₆—Me— (CH₂)₆—Me

RN 59970-74-0 ZCAPLUS

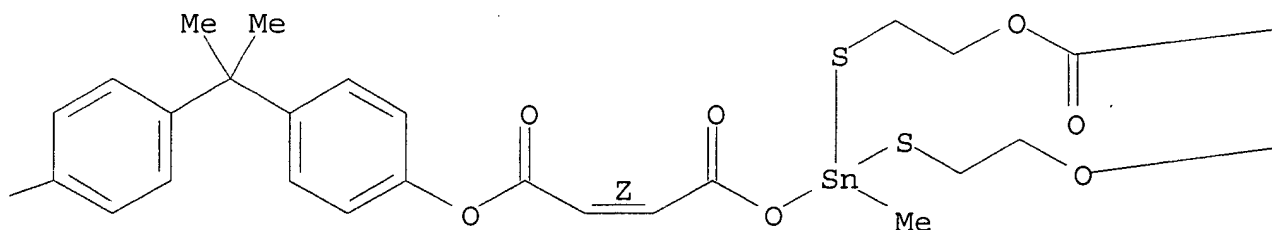
CN 5,10-Dioxa-7-thia-6-stannaoctacos-2,19-dienoic acid,
 6,6-dimethyl-4,11-dioxo-, 4-[1-methyl-1-[4-[[6-methyl-1,11-dioxo-6-
 [[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-5,10-dioxa-7-thia-6-
 stannaoctacos-2,19-dien-1-yl]oxy]phenyl]ethyl]phenyl ester,
 (all-Z) - (9CI) (CA INDEX NAME)

Double bond geometry as shown.

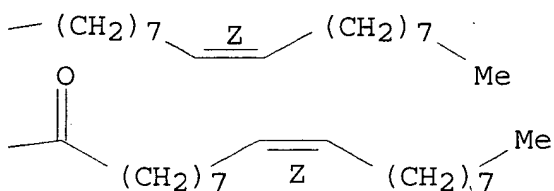
PAGE 1-A



PAGE 1-B



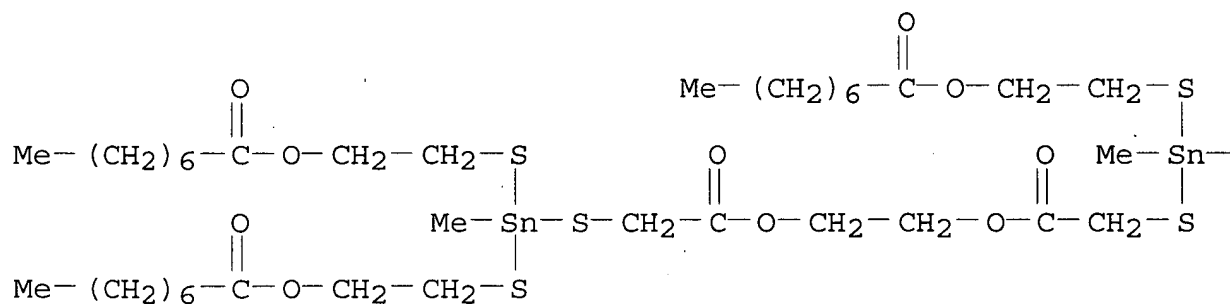
PAGE 1-C



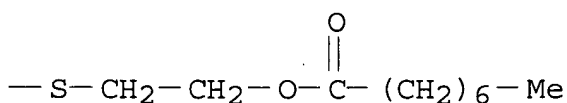
RN 60003-88-5 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-, 1,2-ethanediyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

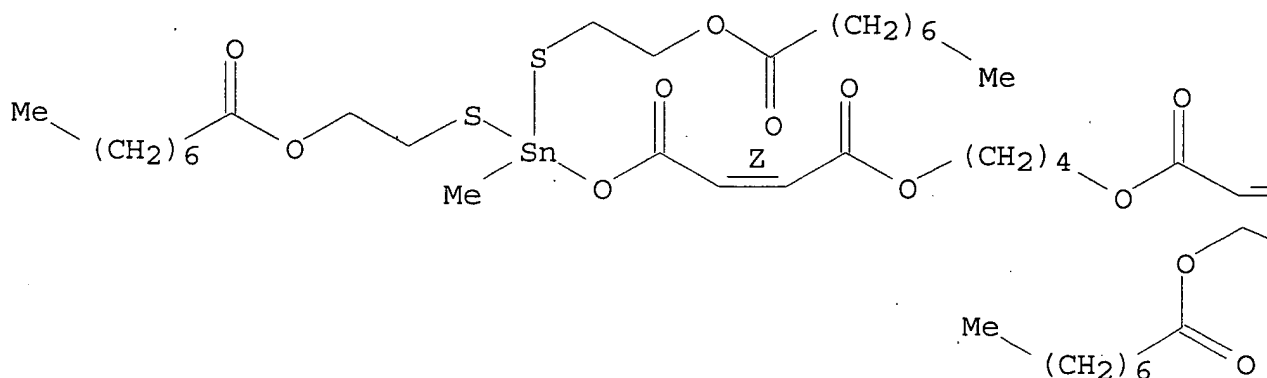


RN 60003-89-6 ZCAPLUS

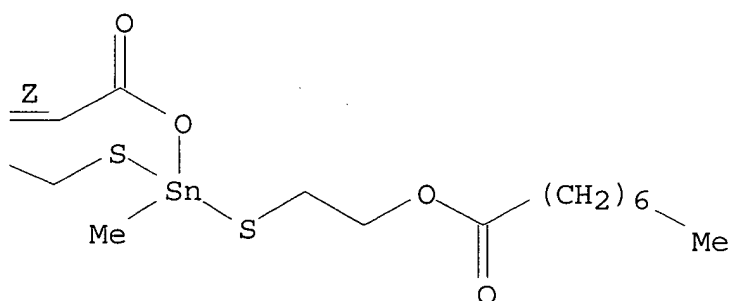
CN 5,10-Dioxo-7-thia-6-stannaoctadec-2-enoic acid, 6-methyl-4,11-dioxo-6-[[2-[(1-oxooctyl)oxy]ethyl]thio]-, 1,4-butanediyl ester, (Z,Z)-(9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

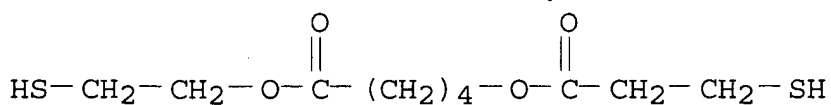


IT 15196-22-2 28772-22-7 38705-47-4
 57813-59-9 59118-78-4 59119-10-7
 59970-59-1

(reaction of, with organotin chlorides)

RN 15196-22-2 ZCAPLUS

CN Pentanoic acid, 5-(3-mercapto-1-oxopropoxy)-, 2-mercaptoethyl ester
 (9CI) (CA INDEX NAME)



RN 28772-22-7 ZCAPLUS

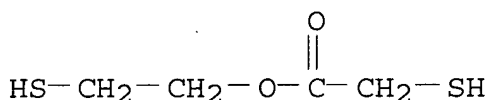
CN 2-Butenedioic acid (2Z)-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



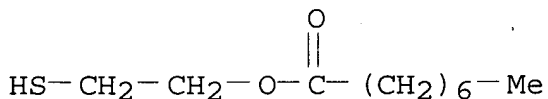
RN 38705-47-4 ZCAPLUS

CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

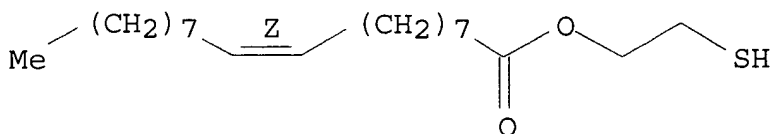
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

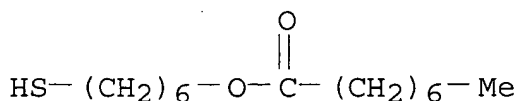
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



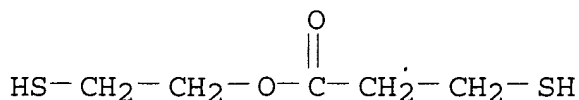
RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



RN 59970-59-1 ZCAPLUS

CN Propanoic acid, 3-mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 59119-11-8 59970-53-5 59970-54-6
 59970-55-7 59970-56-8 59970-57-9
 59970-58-0 59970-60-4 59970-61-5
 59970-62-6 59970-63-7 59970-64-8
 59970-65-9 59970-66-0 59970-67-1
 59970-68-2 59970-69-3 59970-70-6
 59970-71-7 59970-72-8 59970-74-0
 60003-88-5 60003-89-6

(heat stabilizers, for PVC)

IT 15196-22-2 28772-22-7 38705-47-4
 57813-59-9 59118-78-4 59119-10-7
 59970-59-1

(reaction of, with organotin chlorides)

L26 ANSWER 26 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1976:181132 Document No. 84:181132 Organotin compounds and their use
 as stabilizers. Kugele, Thomas G. (Cincinnati Milacron, Inc., USA).
 Ger. Offen. DE 2531308 19760205, 81 pp. (German). CODEN: GWXXBX.
 APPLICATION: DE 1975-2531308 19750712.

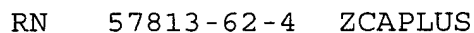
AB Esters of alkyl[(hydroxyalkyl)thio]tin compds. contg. 1-2 C1-20
 hydrocarbyl groups or their sulfides are heat stabilizers for PVC
 [9002-86-2] with improved storage stability. Thus, adding 40 g 50%
 NaOH dropwise to 110 g Me₂SnCl₂ [753-73-1] and 109 g
 C₈H₁₇CO₂CH₂CH₂SH [30982-97-9] stirred in 200 ml H₂O at
 30-40.degree., stirring 1 hr, adding 32.5 g 60% Na₂S [1313-82-2]
 dropwise at 25-35.degree., and stirring 1 hr at 35.degree. gives
 95.5% (C₈H₁₇CO₂CH₂CH₂SSnMe₂)₂S (I) [59119-13-0].
 Compounded PVC (Geon 103EP) contg. I equiv. to 150 mg Sn/100 g has
 color (10 = colorless, 5 = orange-brown, 0 = blackened) >9, >7, 6,
 5, 4, 3, and 2 after being calendered 1, 4, 6, 7, 8, 9, and 10 min,
 resp., at 193.degree..

IT 57813-60-2 57813-62-4 59118-76-2
 59118-77-3 59118-79-5 59118-80-8
 59118-81-9 59118-82-0 59118-83-1
 59118-86-4 59118-87-5 59118-88-6
 59118-89-7 59118-90-0 59118-91-1
 59118-92-2 59118-95-5 59118-96-6
 59118-97-7 59118-98-8 59118-99-9
 59119-00-5 59119-01-6 59119-03-8
 59119-04-9 59119-05-0 59119-07-2
 59119-08-3 59119-11-8 59119-13-0
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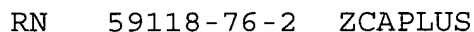
59158-80-4 59213-33-1

RN 57813-60-2 ZCAPLUS

(9CI) (CA INDEX NAME)



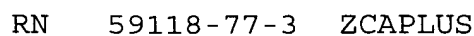
(9CI)	(CA INDEX NAME)
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100	100



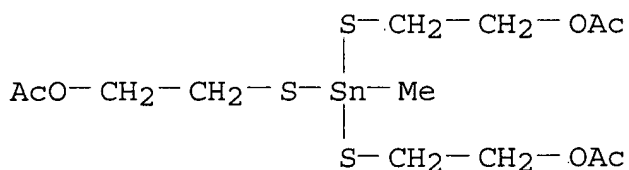
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ester (9CI)      (CA INDEX NAME)

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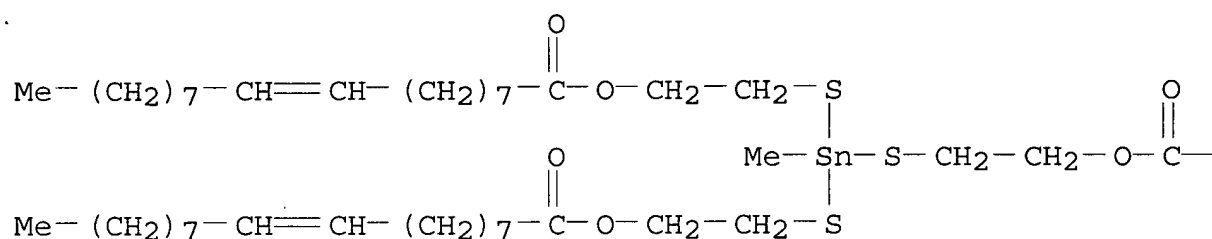
(9CI) (CA INDEX NAME)



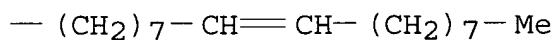
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediy) ester (9CI) (CA INDEX NAME)

PAGE 1-A

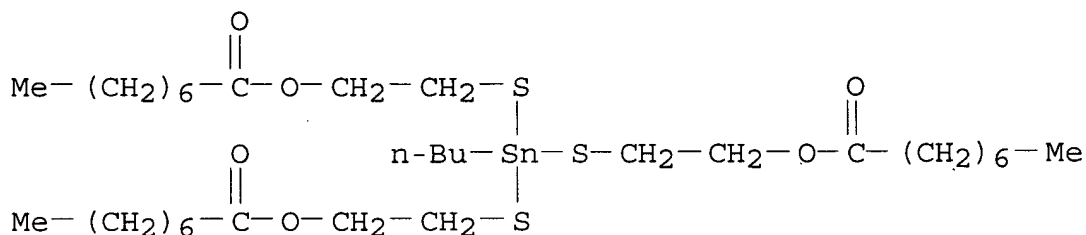


PAGE 1-B



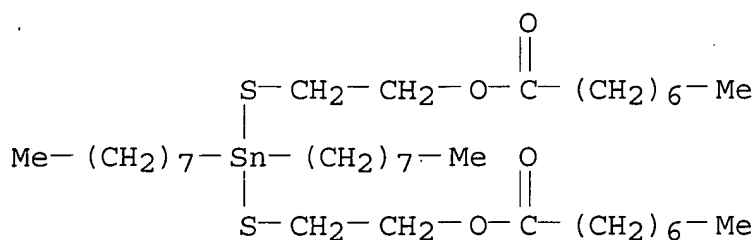
RN 59118-80-8 ZCAPLUS

Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



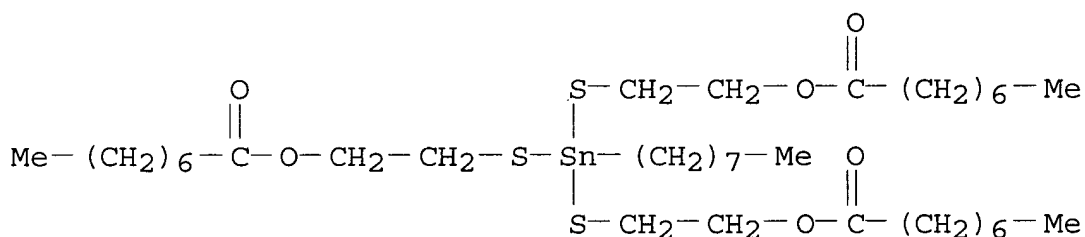
RN 59118-81-9 ZCAPLUS

Octanoic acid, (dioctylstannylene)bis(thio-2',1-ethanediyl) ester
(9CI) (CA INDEX NAME)



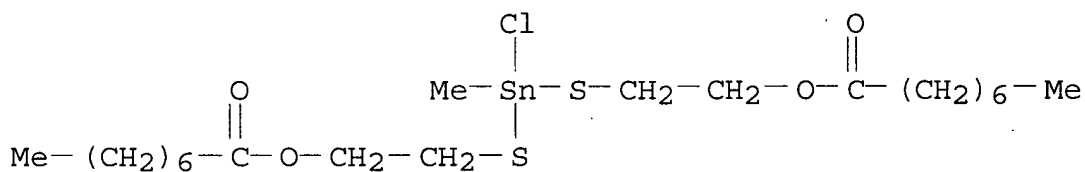
RN 59118-82-0 ZCAPLUS

CN Octanoic acid, (octylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



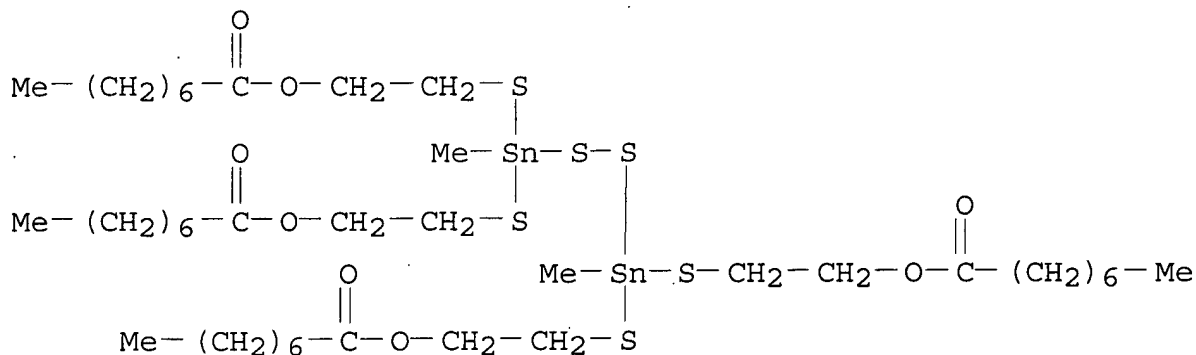
RN 59118-83-1 ZCAPLUS

CN Octanoic acid, (chloromethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



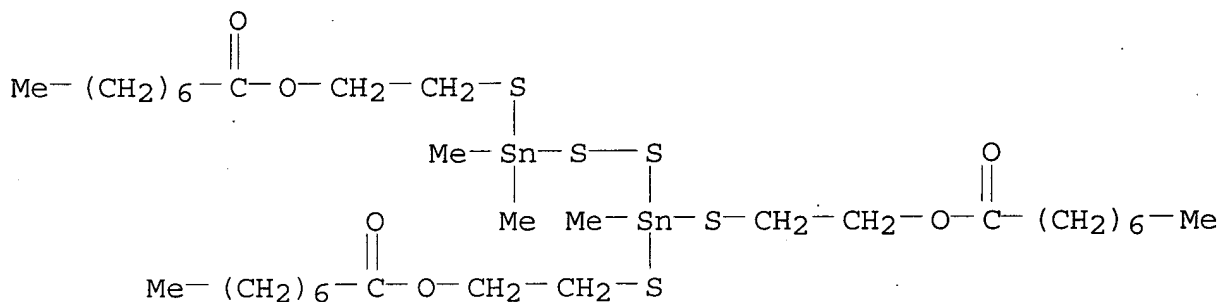
RN 59118-86-4 ZCAPLUS

CN Octanoic acid, 4,7-dimethyl-4,7-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,6,8-tetrathia-4,7-distannadecane-1,10-diyl ester (9CI) (CA INDEX NAME)



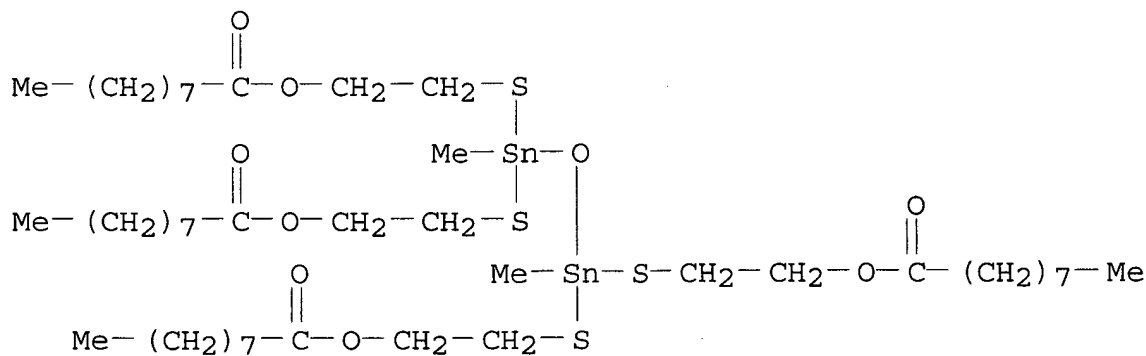
RN 59118-87-5 ZCAPLUS

CN Octanoic acid, 4,4,7-trimethyl-7-[[2-[(1-oxooctyl)oxy]ethyl]thio]-
 3,5,6,8-tetrathia-4,7-distannadecane-1,10-diyl ester (9CI) (CA
 INDEX NAME)



RN 59118-88-6 ZCAPLUS

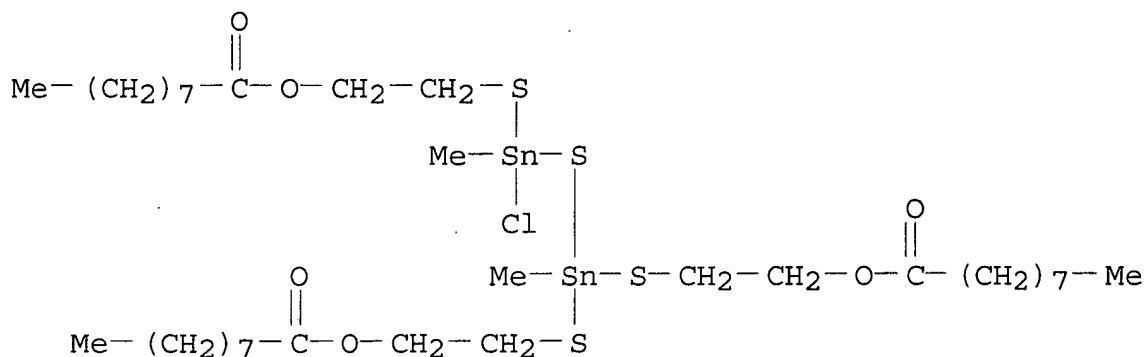
CN Nonanoic acid, (1,3-dimethyl-1,3-distannoxanediylidene)tetrakis(thio-
 2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59118-89-7 ZCAPLUS

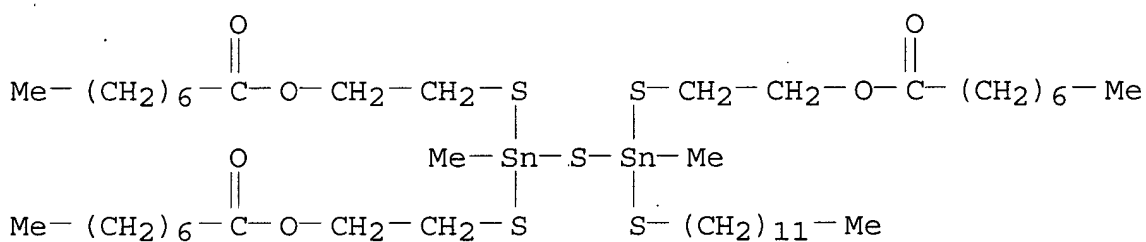
CN Nonanoic acid, (1-chloro-1,3-dimethyl-1-distannathianyl-3-

ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



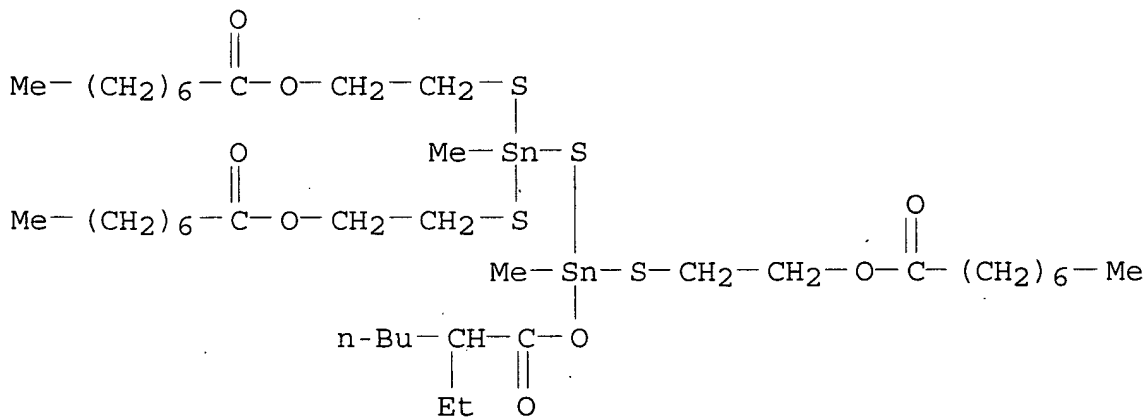
RN 59118-90-0 ZCAPLUS

CN Octanoic acid, [1-(dodecylthio)-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



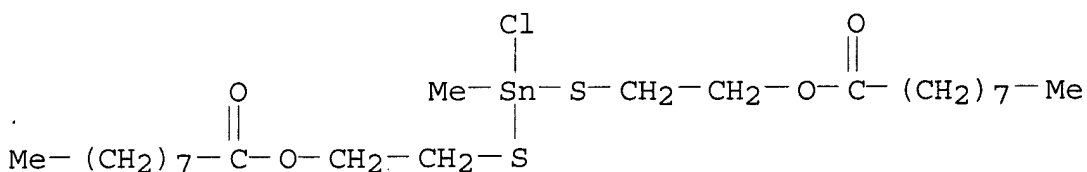
RN 59118-91-1 ZCAPLUS

CN Octanoic acid, [1-[(2-ethyl-1-oxohexyl)oxy]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



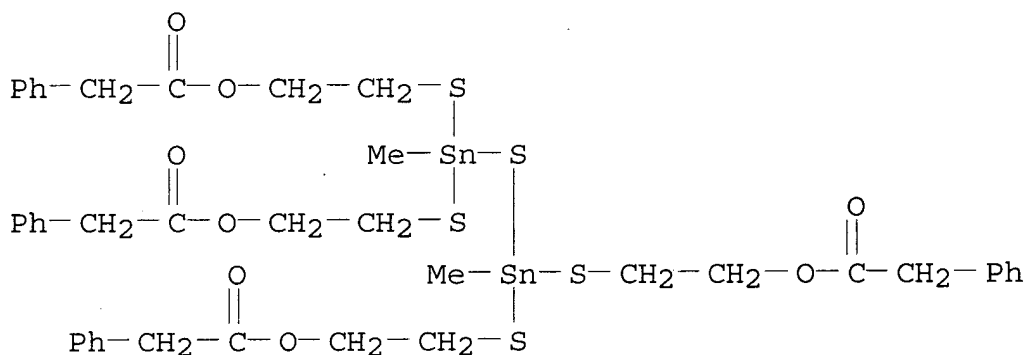
RN 59118-92-2 ZCAPLUS

CN	Nonanoic acid, (chloromethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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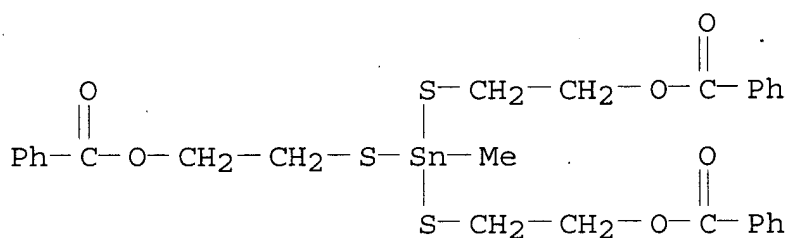
RN 59118-95-5 ZCAPLUS

CN Benzeneacetic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrak
 is(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



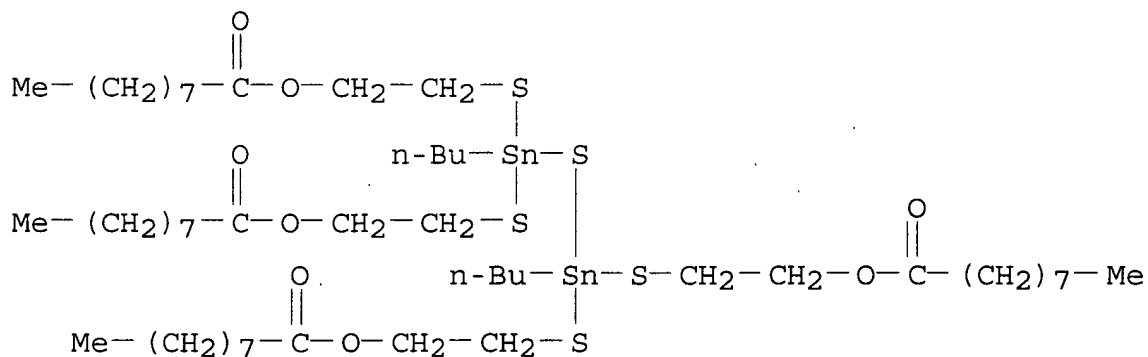
RN 59118-96-6 ZCAPLUS

Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, tribenzoate
 (9CI) (CA INDEX NAME)

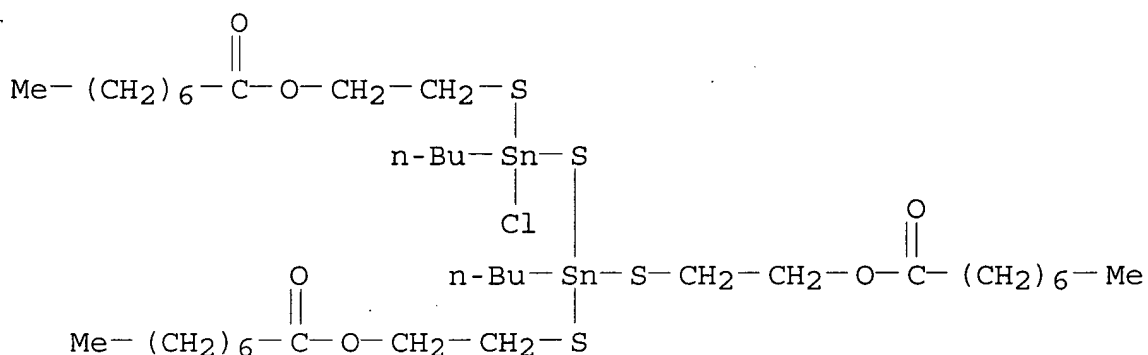


RN 59118-97-7 ZCAPLUS

CN	Nonanoic acid, (1,3-dibutyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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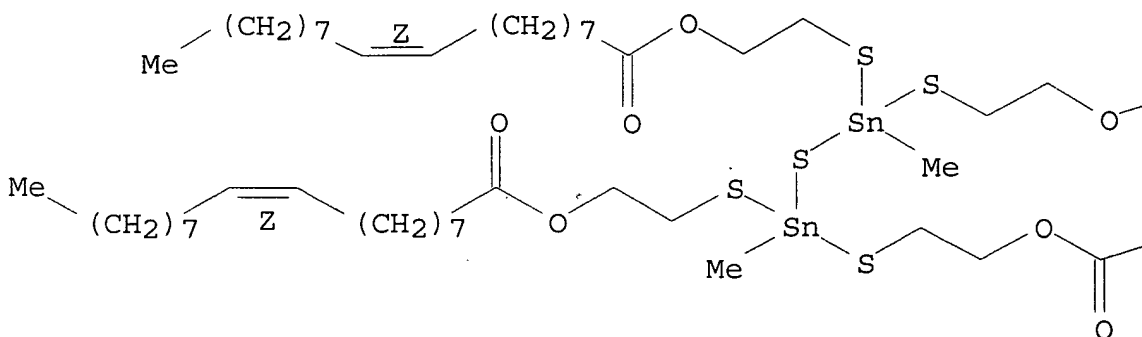
CN	Octanoic acid, (1,3-dibutyl-1-chloro-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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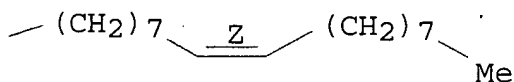
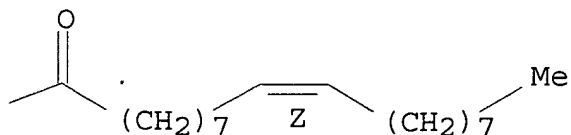
CN 9-Octadecenoic acid (9Z)-, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

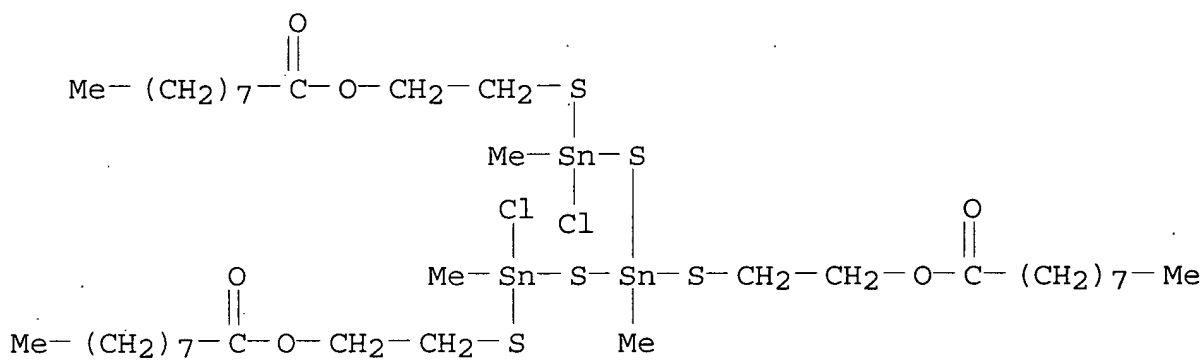


PAGE 1-B



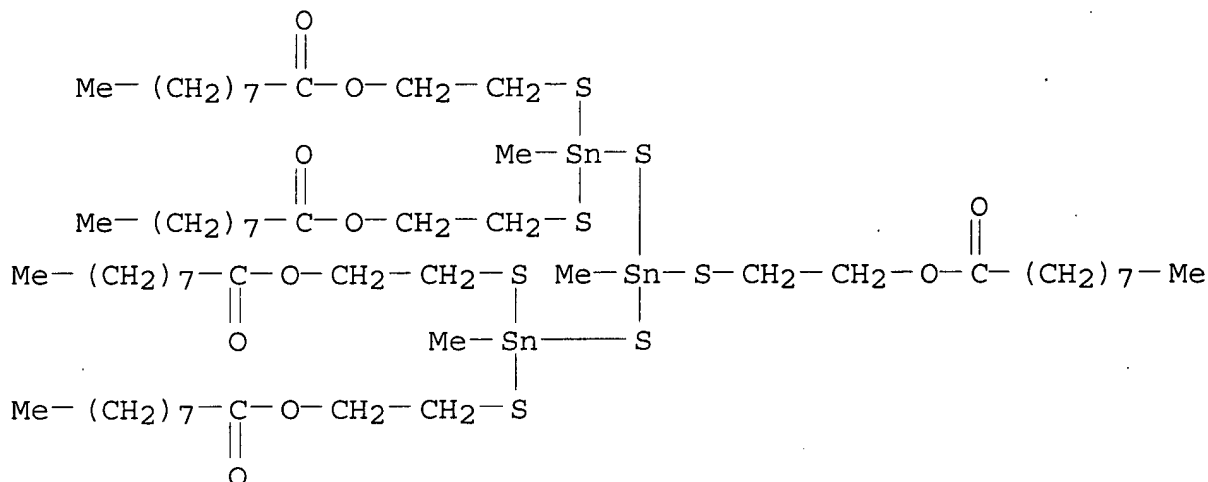
RN 59119-00-5 ZCAPLUS

CN Nonanoic acid, (1,5-dichloro-1,3,5-trimethyl-1,3,5-tristannathianetriyl)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



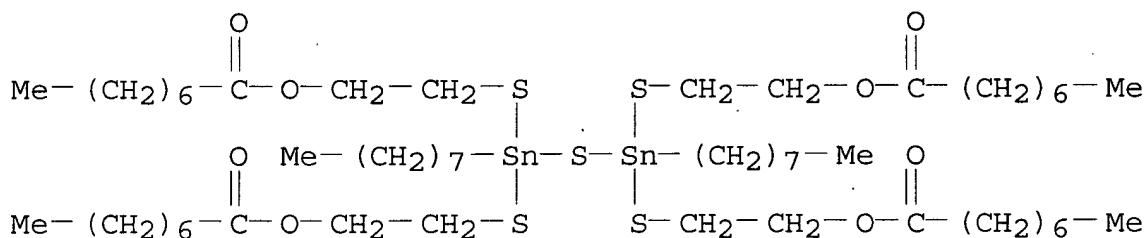
RN 59119-01-6 ZCAPLUS

CN Nonanoic acid, (1,3,5-trimethyl-3-tristannathianyl-1,5-diylidene)pentakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59119-03-8 ZCAPLUS

CN Octanoic acid, (1,3-dioctyl-1,3-distannathianediylidene) tetrakis(thi
o-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

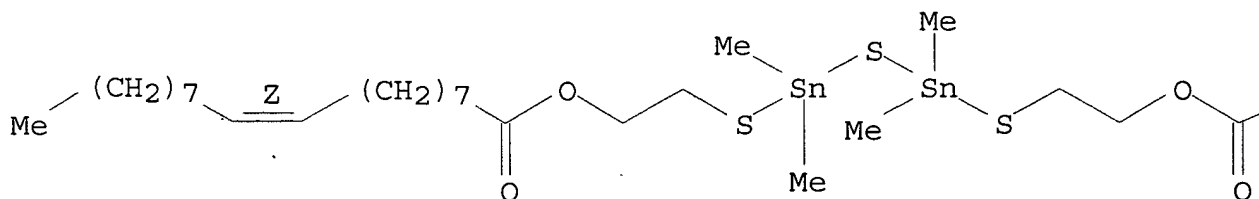


RN 59119-04-9 ZCAPLUS

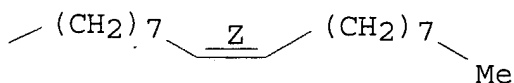
9-Octadecenoic acid (9Z)-, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

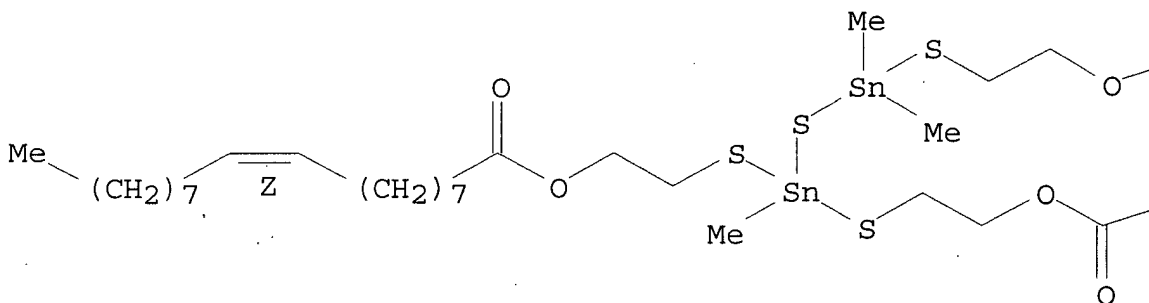


RN 59119-05-0 ZCAPLUS

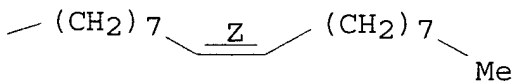
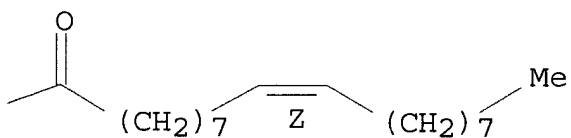
CN 9-Octadecenoic acid (9Z)-, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

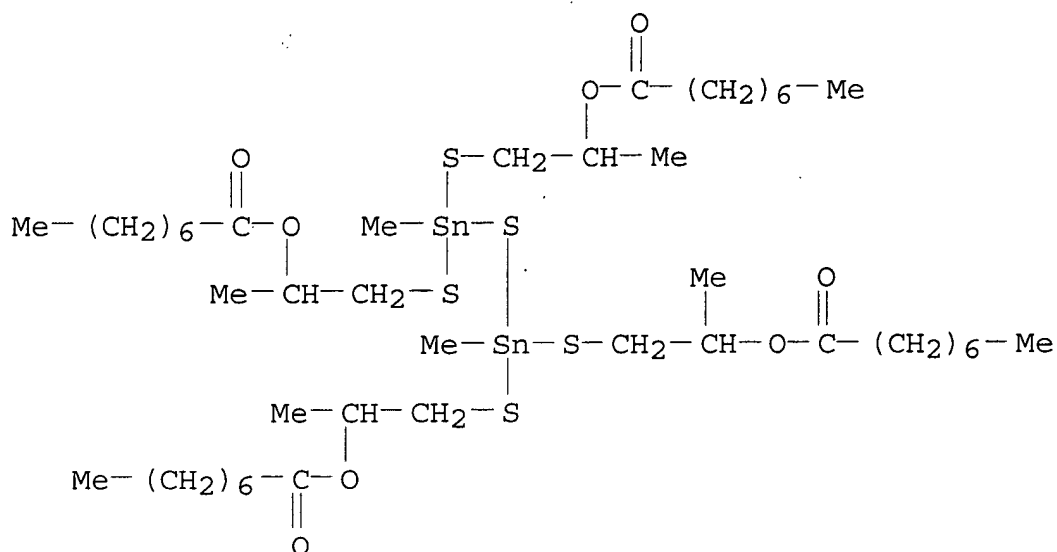


PAGE 1-B



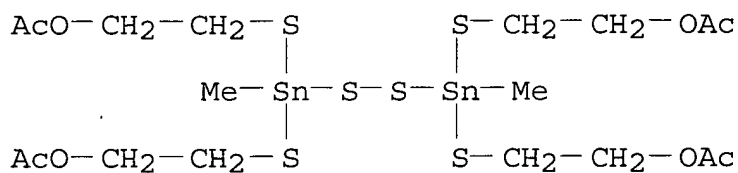
RN 59119-07-2 ZCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis[thio(1-methyl-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)



RN 59119-08-3 ZCAPLUS

CN 3,5,6,8-Tetrathia-4,7-distannadecane-1,10-diol, 4,7-bis[[2-(acetyloxy)ethyl]thio]-4,7-dimethyl-, diacetate (9CI) (CA INDEX NAME)

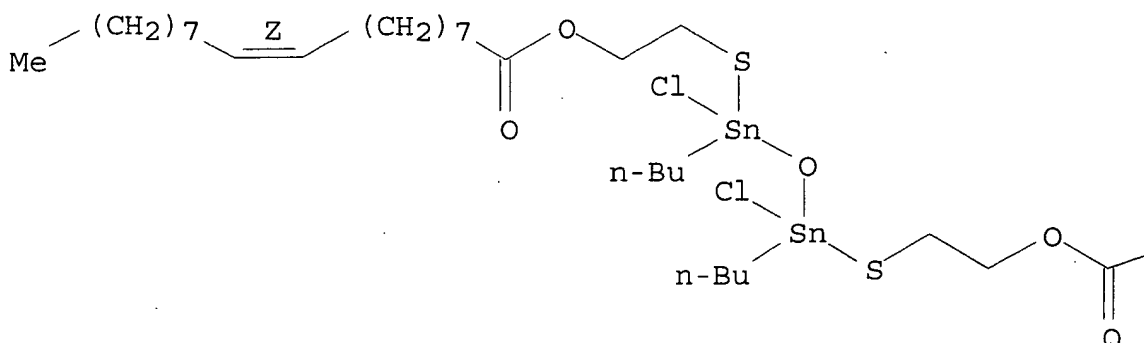


RN 59119-11-8 ZCAPLUS

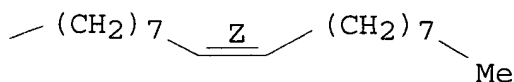
CN 9-Octadecenoic acid (9Z)-, (1,3-dibutyl-1,3-dichloro-1,3-distannoxanediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

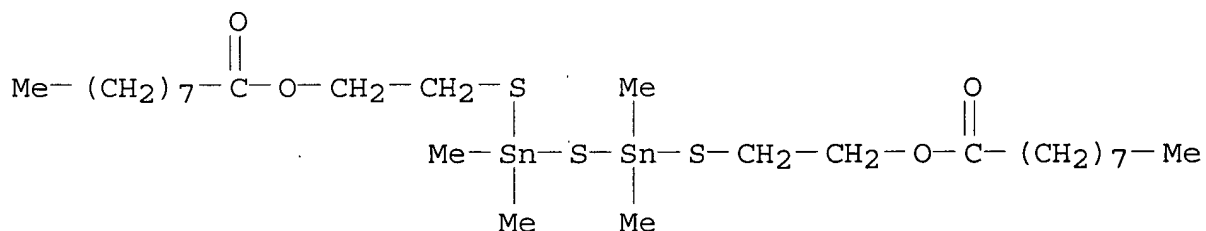


PAGE 1-B



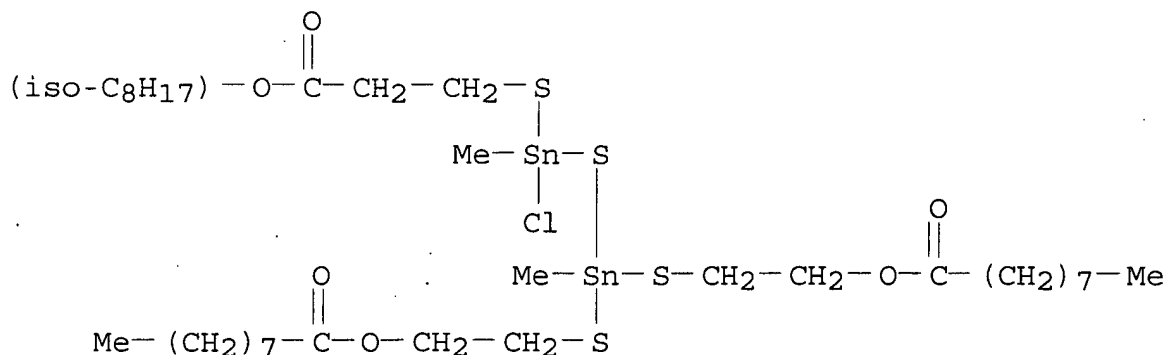
RN 59119-13-0 ZCAPLUS

CN Nonanoic acid, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



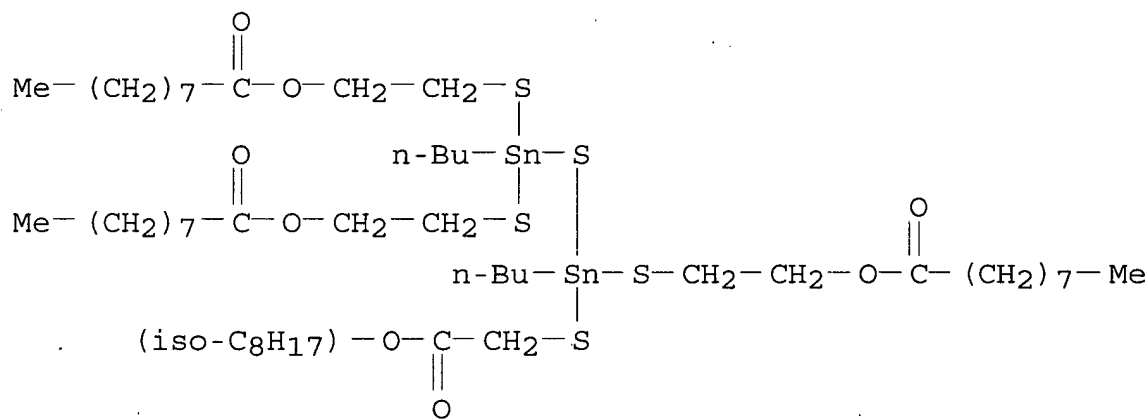
RN 59126-14-6 ZCAPLUS

CN Nonanoic acid, [3-chloro-3-[[3-(isooctyloxy)-3-oxopropyl]thio]-1,3-dimethyldistannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



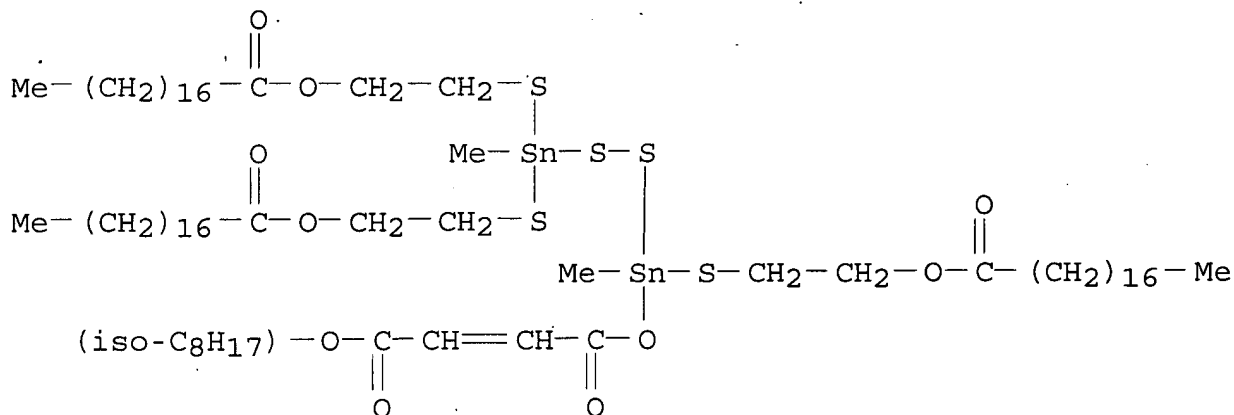
RN 59126-15-7 ZCAPLUS

CN Nonanoic acid, [1,3-dibutyl-1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



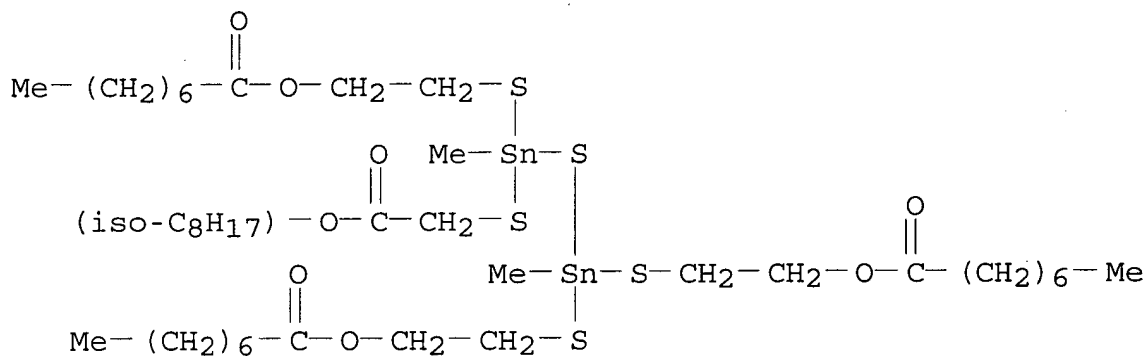
RN 59126-16-8 ZCAPLUS

CN Octadecanoic acid, 4-[[[4-(isooctyloxy)-1,4-dioxo-2-butenyl]oxy]-4,7-dimethyl-7-[[2-[(1-oxooctadecyl)oxy]ethyl]thio]-3,5,6,8-tetrathia-4,7-distannadecane-1,10-diyl ester, (Z)- (9CI) (CA INDEX NAME)



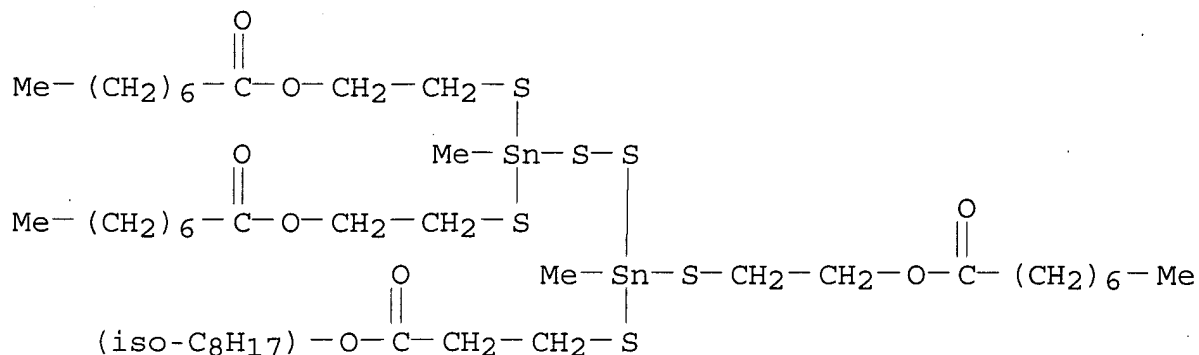
RN 59126-17-9 ZCAPLUS

CN Octanoic acid, [1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



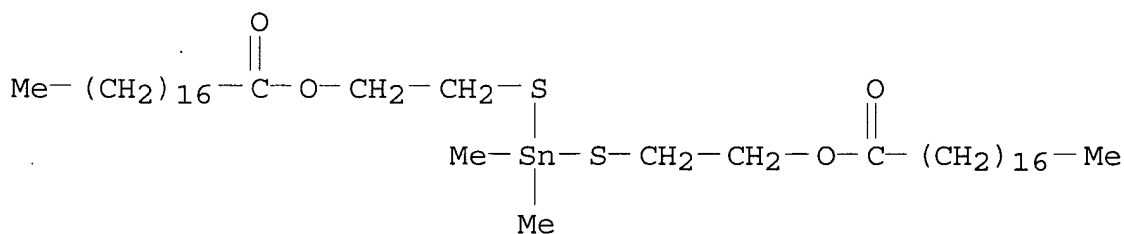
RN 59126-18-0 ZCAPLUS

CN	Octanoic acid, 4-[[3-(isooctyloxy)-3-oxopropyl]thio]-4,7-dimethyl-7- [[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,6,8-tetrathia-4,7- distannadecane-1,10-diyl ester (9CI) (CA INDEX NAME)
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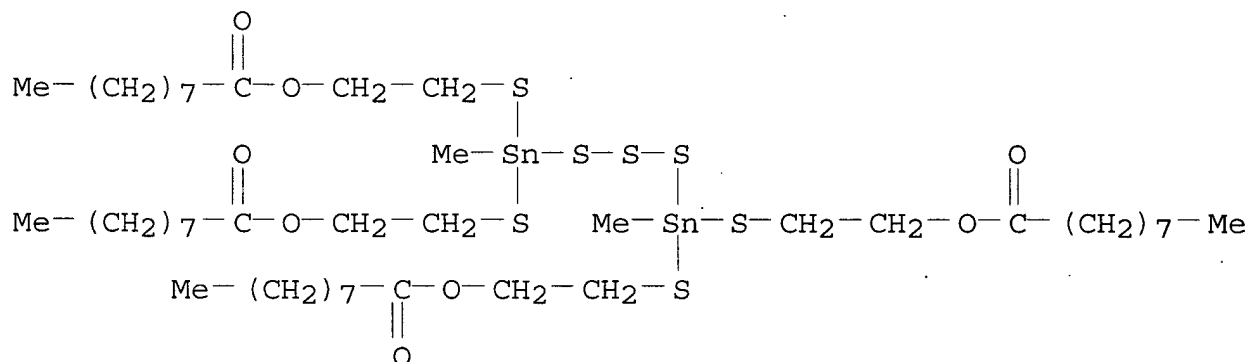
RN 59138-44-2 ZCAPLUS

CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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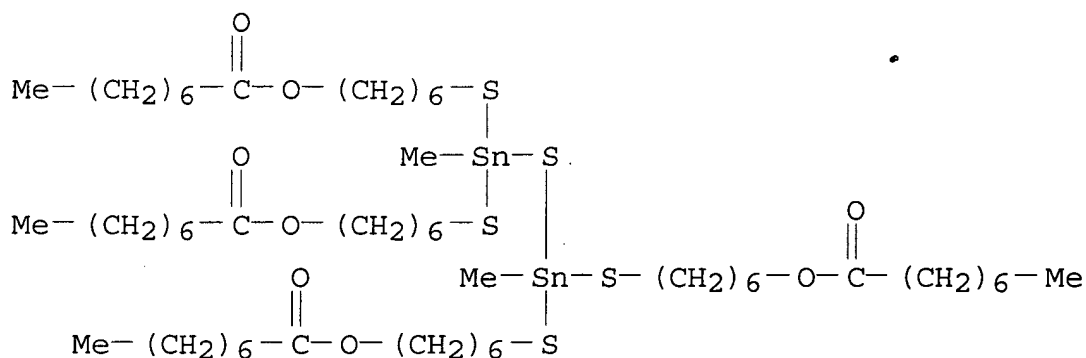
RN 59138-45-3 ZCAPLUS

CN Nonanoic acid, 4,5-dimethyl-4,8-bis[[2-[(1-oxononyl)oxy]ethyl]thio]-3,5,6,7,9-pentathia-4,8-distannaundecane-1,11-diyl ester (9CI) (CA INDEX NAME)



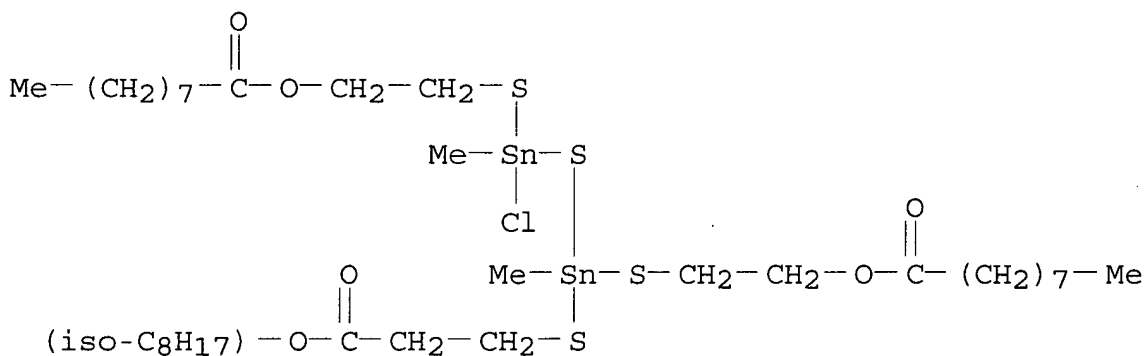
RN 59138-46-4 ZCAPLUS

CN	Octanoic acid, [(1,3-dimethyl-1,3-distannathianediylidene) tetrakis(thio)]tetra-6,1-hexanediyl ester (9CI) (CA INDEX NAME)
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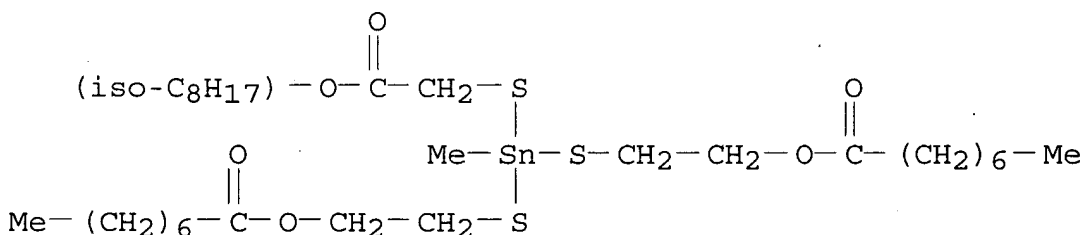
RN 59158-79-1 ZCAPLUS

CN 11-Oxa-4,6,8-trithia-7-stannaeicosanoic acid, 7-chloro-5,7-dimethyl-12-oxo-5-[[2-[(1-oxononyl)oxy]ethyl]thia]-, isooctyl ester (9CI)
(CA INDEX NAME)



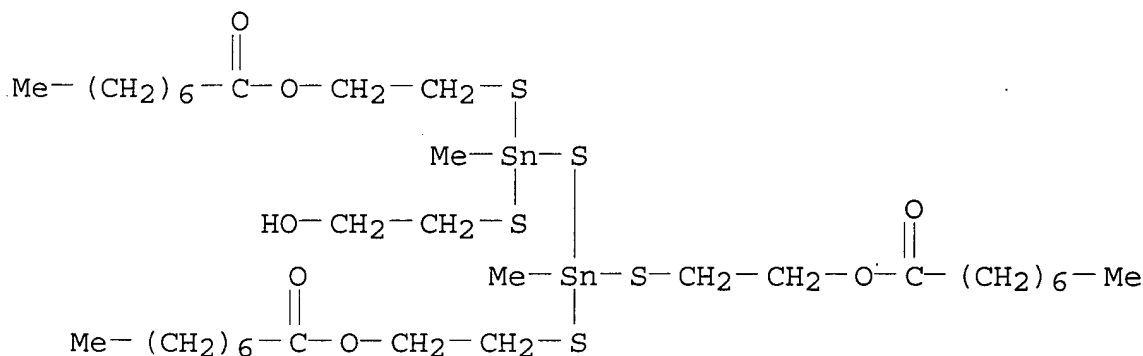
RN 59158-80-4 ZCAPLUS

CN Octanoic acid, [[[2-(isooctyloxy)-2-oxoethyl]thio]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

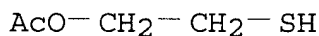


RN 59213-33-1 ZCAPLUS

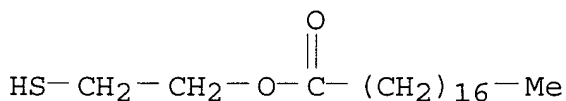
CN Octanoic acid, [1-[(2-hydroxyethyl)thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



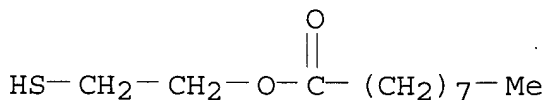
IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)
 RN 5862-40-8 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



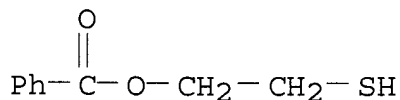
RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



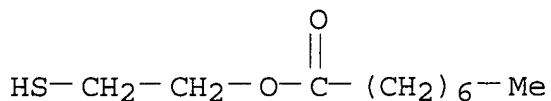
RN 30982-97-9 ZCAPLUS
 CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 50627-04-8 ZCAPLUS
 CN Ethanol, 2-mercapto-, 1-benzoate (9CI) (CA INDEX NAME)

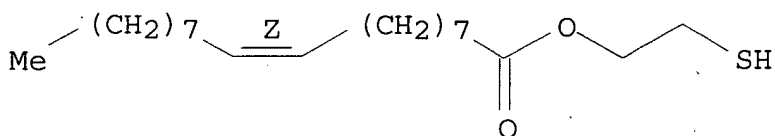


RN 57813-59-9 ZCAPLUS
 CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

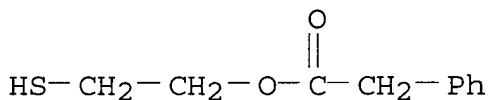


RN 59118-78-4 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

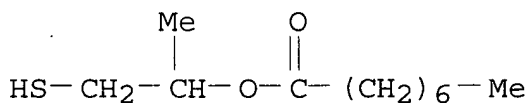
Double bond geometry as shown.



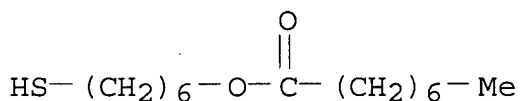
RN 59118-94-4 ZCAPLUS
 CN Benzeneacetic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59119-06-1 ZCAPLUS
 CN Octanoic acid, 2-mercapto-1-methylethyl ester (9CI) (CA INDEX NAME)



RN 59119-10-7 ZCAPLUS
 CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



IT 57813-60-2 57813-62-4 59118-76-2
 59118-77-3 59118-79-5 59118-80-8
 59118-81-9 59118-82-0 59118-83-1

59118-86-4 59118-87-5 59118-88-6
 59118-89-7 59118-90-0 59118-91-1
 59118-92-2 59118-95-5 59118-96-6
 59118-97-7 59118-98-8 59118-99-9
 59119-00-5 59119-01-6 59119-03-8
 59119-04-9 59119-05-0 59119-07-2
 59119-08-3 59119-11-8 59119-13-0
 59126-14-6 59126-15-7 59126-16-8
 59126-17-9 59126-18-0 59138-44-2
 59138-45-3 59138-46-4 59158-79-1
 59158-80-4 59213-33-1

(heat stabilizers, for PVC)

IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)

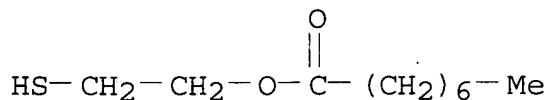
L26 ANSWER 27 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1976:44363 Document No. 84:44363 Organotin mercaptides. Molt, Kenneth
 R. (Cincinnati Milacron Chemicals, Inc., USA). Ger. Offen. DE
 2503554 19750911, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE
 1975-2503554 19750129.

AB Approx. 20 methyltin thioethers, e.g., [(C₈H₁₇O₂CCH₂S)₂SnMe]₂S,
 MeSn(SCH₂CO₂C₈H₁₇)₃, [(C₇H₁₅CO₂CH₂CH₂S)₂SnMe]₂S,
 Me₂Sn(SCH₂Ph)SCH₂CO₂C₈H₁₇, etc. were prep'd. E.g., Me₂SnCl₂ and Na₂S
 gave Me₂SnS, which, with ClCH₂CH₂O₂CC₇H₁₅, gave
 Me₂SnClSCH₂CH₂O₂CC₇H₁₅. This treated with HSCH₂CH₂O₂CC₇H₁₅ gave
 Me₂Sn(SCH₂CH₂O₂CC₇H₁₅)₂. The methyltin thioethers were stabilizers
 for polyvinyl chloride.

IT 57813-59-9P 57813-60-2P 57813-61-3P
 57813-62-4P 57813-64-6P
 (prepn. of)

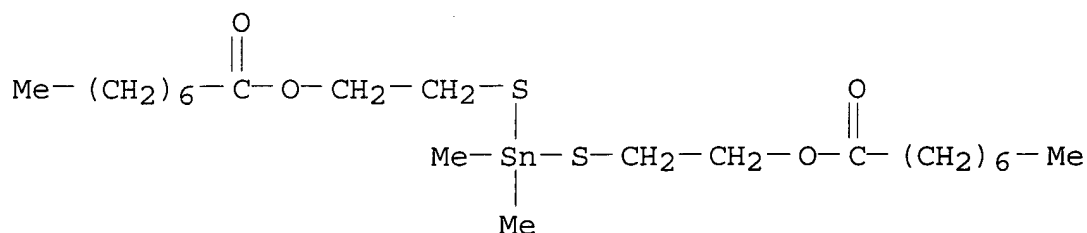
RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



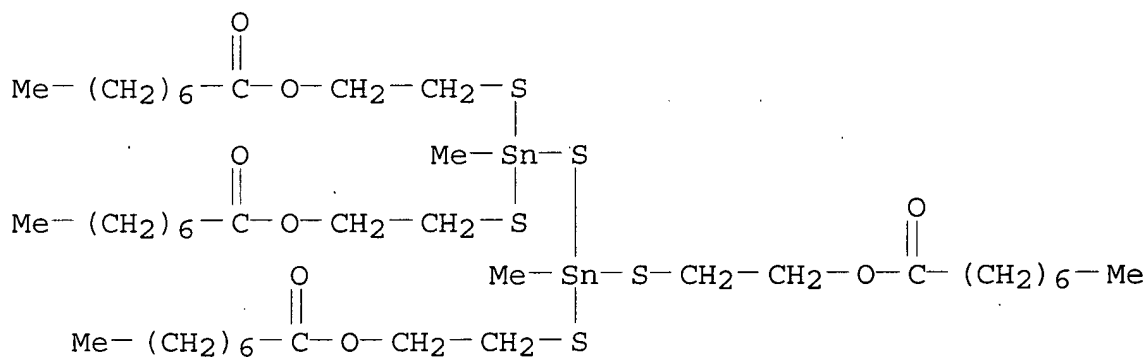
RN 57813-60-2 ZCAPLUS

CN Octanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



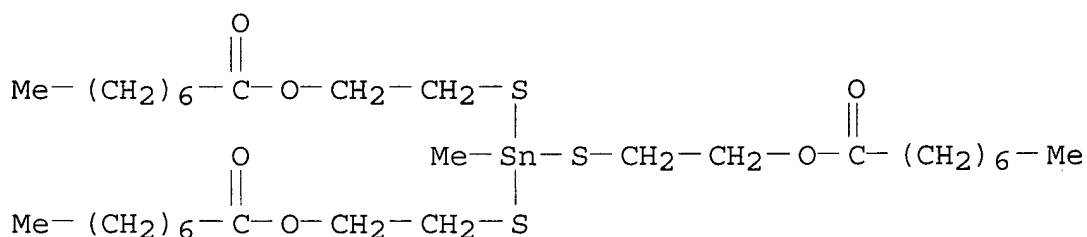
RN 57813-61-3 ZCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene) tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



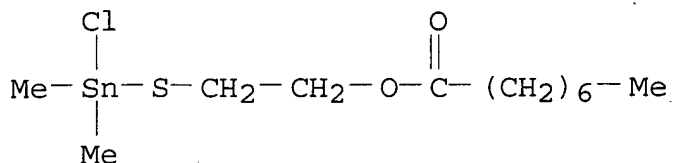
RN 57813-62-4 ZCAPLUS

CN Octanoic acid, (methylstannylidyne) tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 57813-64-6 ZCAPLUS

CN Octanoic acid, 2-[(chlorodimethylstannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

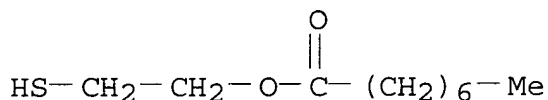


IT 57813-59-9

(reaction with tin chlorides)

RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 57813-59-9P 57813-60-2P 57813-61-3P

57813-62-4P 57813-64-6P

(prepn. of)

IT 57813-59-9

(reaction with tin chlorides)

L26 ANSWER 28 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN

1972:527410 Document No. 77:127410 Boron-containing organotin compounds for stabilizing poly(vinyl chloride). Kawakami, Yohei; Seki, Toshio; Suzuki, Kozaburo (Nitto Kasei Co., Ltd.). U.S. US 3682992 19720808, 8 pp. Division of U.S. 3,539,529 (CA 74;23378w). (English). CODEN: USXXAM. APPLICATION: US 1969-880449 19691208.

AB B-contg. organotin compds. (I), where R is alkyl, alkenyl, aralkyl, alkylaryl and aryl; X1 is a mono, di, and polymercapto residue contg. ≤ 1 free sulfhydryl radical, and X2 and X3 are OH or the X1 residues, were prep'd. and used as stabilizers for poly(vinyl chloride) [9002-86-2] having low volatility. Poly(vinyl chloride) contg. 2% I (R = Bu, X1 = X2 = X3 = SCH2CO2CHMeCH2O2CCH2SH), prep'd. by treating 1 mole H3BO3 with 3 mole Bu2SnO and 3 moles propylene glycol dithioglycolate, had improved light and heat resistance.

IT 21275-62-7 30649-72-0 30786-44-8

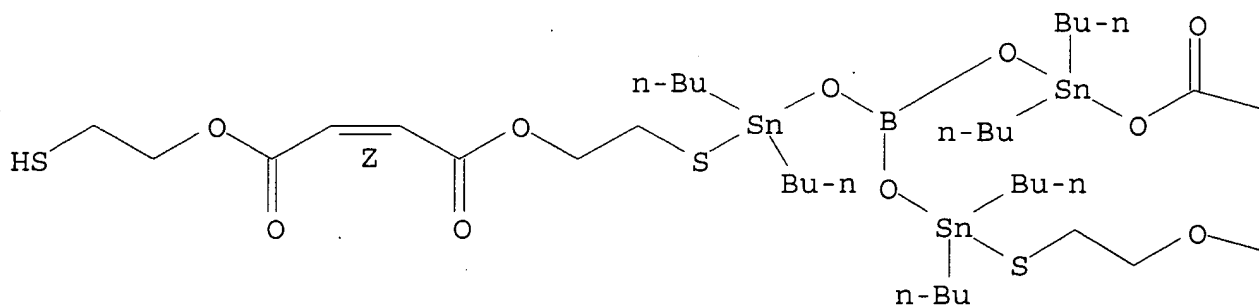
(heat and light stabilizers, for polyvinyl chloride)

RN 21275-62-7 ZCAPLUS

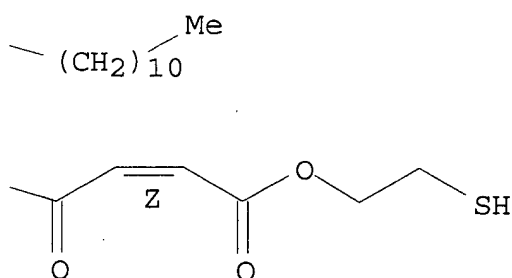
CN 5,10,12,17-Tetraoxa-8,14-dithia-9,13-distanna-11-boraheneicosa-2,19-dienedioic acid, 9,9,13,13-tetrabutyl-11-[[dibutyl[(1-oxododecyl)oxy]stannyl]oxy]-4,18-dioxo-, bis(2-mercaptoethyl) ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



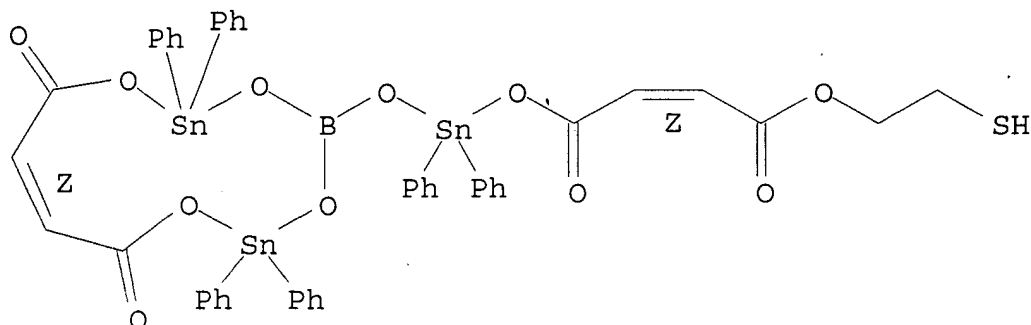
PAGE 1-B



RN 30649-72-0 ZCAPLUS

CN 2-Butenoic acid, 4-[[[(8,11-dioxo-2,2,6,6-tetraphenyl-1,3,5,7-tetraoxa-2,6-distanna-4-boraundec-9-en-4-yl)oxy]diphenylstannyl]oxy]-4-oxo-, 2-mercaptoethyl ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

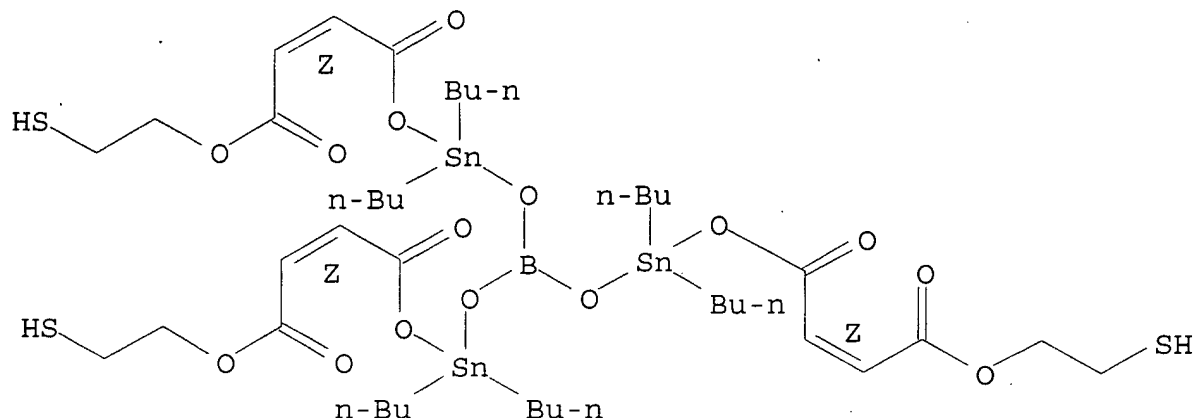


RN 30786-44-8 ZCAPLUS

CN 5,7,9,11-Tetraoxa-6,10-distanna-8-borapentadeca-2,13-dienedioic acid, 6,6,10,10-tetrabutyl-8-[[dibutyl[[4-(2-mercaptoethoxy)-1,4-

dioxo-2-butenyl]oxy]stannyl]oxy]-4,12-dioxo-, bis(2-mercaptoethyl) ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 21275-62-7 30649-72-0 30786-44-8
(heat and light stabilizers, for polyvinyl chloride)

L26 ANSWER 29 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1971:23378 Document No. 74:23378 Poly(vinyl chloride)-stabilized resin compositions incorporating at least one boron-containing organotin compound. Kawakami, Yohei; Seki, Toshio; Suzuki, Jozaburo (Nitto Chemical Industrial Co., Ltd.). U.S. US 3539529 19701110, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1968-700698 19680126.

AB Boric acid is reacted with 3 moles Bu_2SnO , dioctyltin oxide, Me_2SnO , or Ph_2SnO and then with 2 moles bis(2-mercaptoethyl) maleate (I) and 1 mole lauric acid, with 1 mole ethylene glycol dithioglycolate and 2 moles lauryl mercaptan, with 3 moles propylene glycol dithioglycolate, or with similar compds. to prep. B-contg. organotin stabilizers which improve the heat and light stability of poly(vinyl chloride) (II). E.g., boric acid 1, Bu_2SnO 3, I 2, and lauric acid 1 mole were reacted to prep. $\text{C}_{11}\text{H}_{23}\text{CO}_2\text{SnBu}_2\text{OB}[\text{OSnBu}_2\text{SCH}_2\text{CH}_2\text{O}_2\text{CCH:CHC O}_2\text{CH}_2\text{CH}_2\text{SH}]_2$, which was mixed (3%) with II. The mixt. was not discolored after 1.5 hr at 180.degree. or after 48 hr of uv radiation.

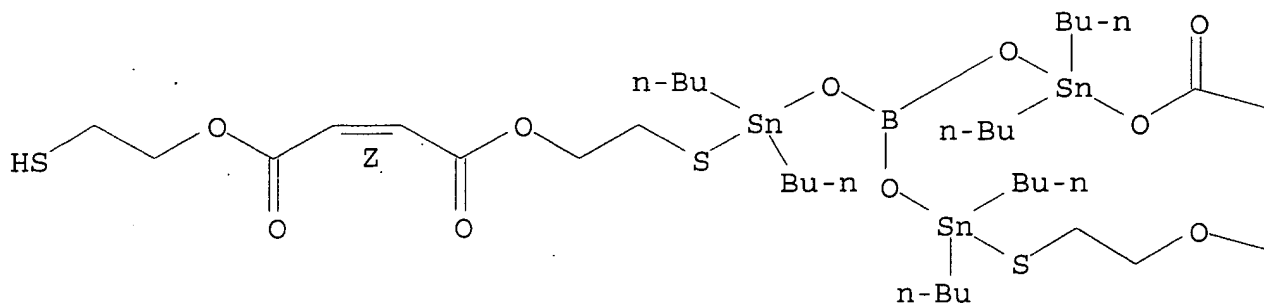
IT 21275-62-7 30649-72-0 30786-44-8
(stabilizers, for vinyl chloride polymers)

RN 21275-62-7 ZCAPLUS

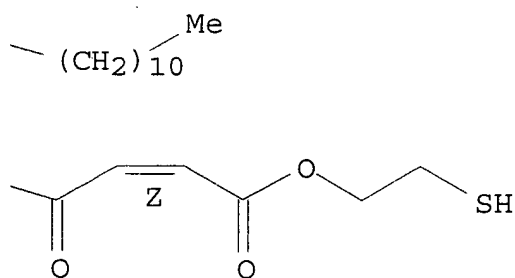
CN 5,10,12,17-Tetraoxa-8,14-dithia-9,13-distanna-11-boraheneicosa-2,19-dienedioic acid, 9,9,13,13-tetrabutyl-11-[[dibutyl[(1-oxododecyl)oxy]stannyl]oxy]-4,18-dioxo-, bis(2-mercaptoethyl) ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



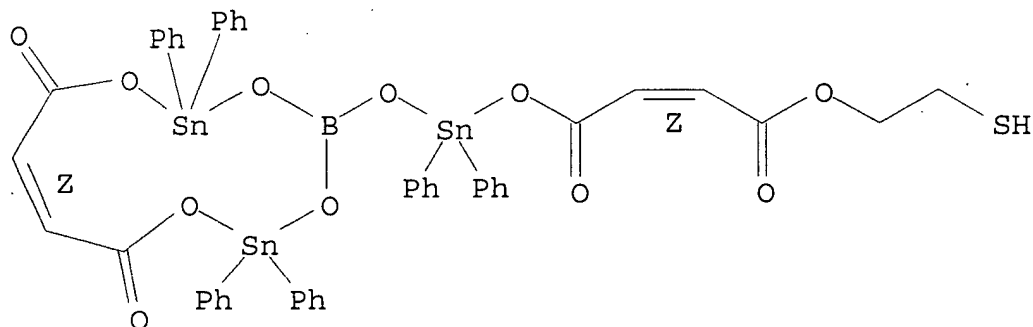
PAGE 1-B



RN 30649-72-0 ZCAPLUS

CN 2-Butenoic acid, 4-[[[(8,11-dioxo-2,2,6,6-tetraphenyl-1,3,5,7-tetraoxa-2,6-distanna-4-boraundec-9-en-4-yl)oxy]diphenylstannyl]oxy]-4-oxo-, 2-mercaptoethyl ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

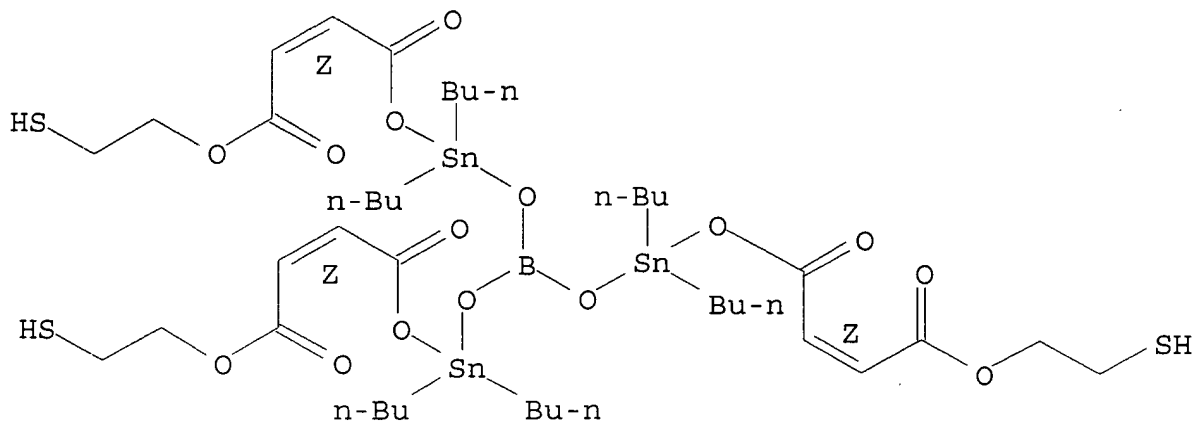


RN 30786-44-8 ZCAPLUS

CN 5,7,9,11-Tetraoxa-6,10-distanna-8-borapentadeca-2,13-dienedioic acid, 6,6,10,10-tetrabutyl-8-[[dibutyl[[4-(2-mercaptoethoxy)-1,4-

dioxo-2-butenyl]oxy]stannyl]oxy]-4,12-dioxo-, bis(2-mercaptoethyl) ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 21275-62-7 30649-72-0 30786-44-8
(stabilizers, for vinyl chloride polymers)

L26 ANSWER 30 OF 30 ZCAPLUS COPYRIGHT 2003 ACS on STN
1968:79165 Document No. 68:79165 Stabilized poly(vinyl chloride).
Suzuki, Kozaburo; Seki, Toshio; Kawakami, Yohei (Nitto Chemical
Industrial Co., Ltd.). Jpn. Tokkyo Koho JP 42019177 B4 19670928
Showa, 6 pp. (Japanese). CODEN: JAXXAD. APPLICATION: JP
19640401.

AB The title resin compn. contg. boron-contg. tin compds.
B(SnR₂X₁)(SnR₂X₂)SnR₂X₃ (I), where R is C1-18 alkyl and X₁-3 is
thiocarboxylate radical, is described. Thus, a mixt. of boric acid
62, Bu₂SnO 750, propylene glycol bis(thioglycolate) 673, C₆H₆ 880,
and EtOH 240 parts was heated for 3.5 hrs. to give 1385 parts I (R =
Bu, X₁ = X₂ = X₃ = SCH₂CO₂CHMeCH₂O₂CCH₂SH) (II). Poly(vinyl
chloride) contg. 2 parts II was milled at 150.degree. for 5 min. and
tested in an oven at 180.degree., but no coloration was observed
until 2 hrs. Similarly prepd. were the following I (R, X₁, X₂, and
X₃ given): Bu, SCH₂CH₂O₂CCH:CHCO₂CH₂CH₂SH - cis,
SCH₂CH₂O₂CCH:CHCO₂CH₂CH₂SH-cis, O₂CC11H₂₃-n; octyl,
SCH₂CO₂CH₂CH₂O₂CCH₂SH, SC12H₂₅-n, SC12H₂₅-n; Me,
SCH₂CO₂CHMeCH₂O₂CCH₂SH, SOCC7H₁₈-n, O₂CCH:CHCO₂CH₂Ph-cis; Ph,
OCH₂CH₂SH, (X₂X₃ =) O₂CCH:CHCO₂-cis.

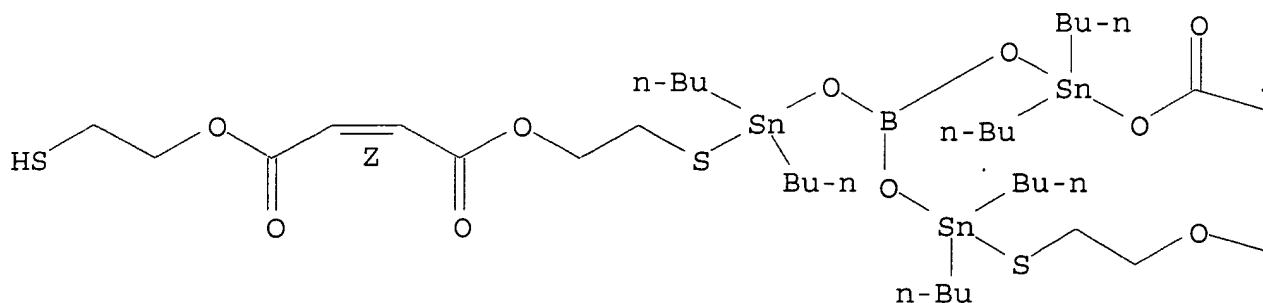
IT 21275-62-7
(as stabilizer for vinyl chloride polymers)

RN 21275-62-7 ZCAPLUS

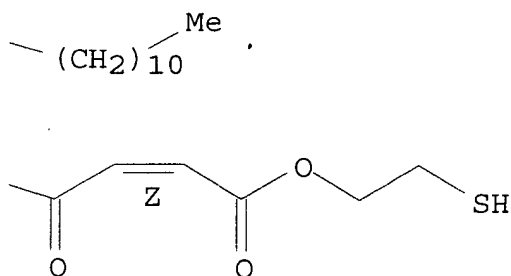
CN 5,10,12,17-Tetraoxa-8,14-dithia-9,13-distanna-11-boraheneicosa-2,19-
dienedioic acid, 9,9,13,13-tetrabutyl-11-[[dibutyl[(1-
oxododecyl)oxy]stannyl]oxy]-4,18-dioxo-, bis(2-mercaptoethyl) ester,
(Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 21275-62-7P

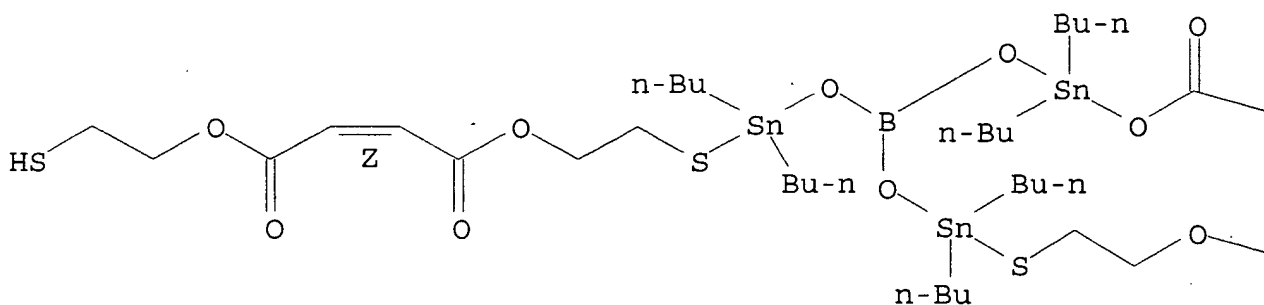
(prepn. of)

RN 21275-62-7 ZCAPLUS

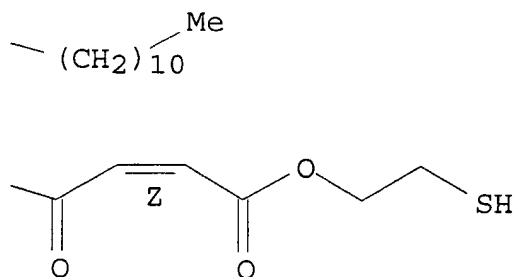
CN 5,10,12,17-Tetraoxa-8,14-dithia-9,13-distanna-11-boraheneicosa-2,19-dienedioic acid, 9,9,13,13-tetrabutyl-11-[[dibutyl[(1-oxododecyl)oxy]stannyl]oxy]-4,18-dioxo-, bis(2-mercaptoethyl) ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 21275-62-7

(as stabilizer for vinyl chloride polymers)

IT 21275-62-7P

(prepn. of)

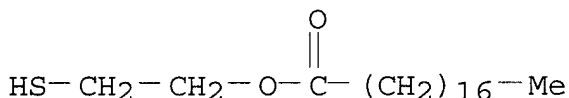
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L36 ANSWER 1 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1987:120858 Document No. 106:120858 Sulfur compound-organotin compound mixtures as heat stabilizers for halogenated resins. Bohen, Joseph M. (Pennwalt Corp. , USA). Eur. Pat. Appl. EP 208044 A2 19870114, 22 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1986-100014 19860102. PRIORITY: US 1985-751392 19850703.

AB Mixts. for the title use comprise (a) alkali or alk. earth metal salts of mercaptans or mercapto acids, optionally .ltoreq.96% replaced by overbased org. complexes of metal bases, and (b) R1a(R2S)3-aSnSmSnR3b(SR4)3-b [R1-4 = (un)substituted alkyl or aryl, a,b = 1 or 2, m = 1-10] or combinations of organotin sulfides and .ltoreq.99.5% organotin mercaptides with CSnS groups. A mixt. of PVC 100, 10:90 Et acrylate-Me acrylate copolymer processing aid 2.0, acrylic impact modifier 7.0, wax 1.0, partially sapond. ester was 0.1, Ca stearate 1.5, TiO2 10.0, dimethyltin bis(2-mercaptoethyl stearate) 0.45, methyltin tris(2-mercaptoethyl stearate) 0.20, methyltin sesquisulfide 0.10, and Ba bis(2-mercaptoethyl stearate) 0.75 parts had Brabender-dynamic-heat-stability failure time 28 min.

IT 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium 2-mercaptoethyl stearate 95115-35-8 107258-68-4
 (heat stabilizers, for halogenated resins)

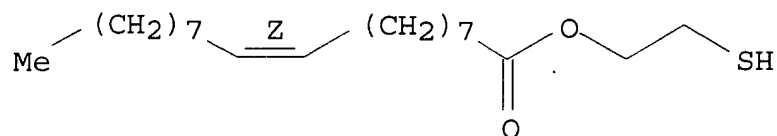
RN 69128-10-5 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

RN 85508-82-3 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI)
 (CA INDEX NAME)

Double bond geometry as shown.

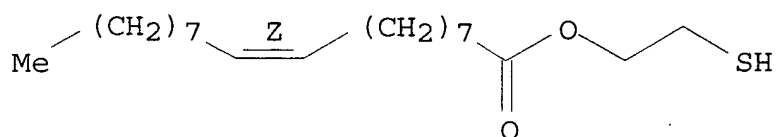


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

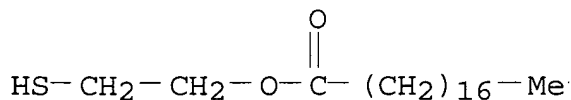
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

. Double bond geometry as shown.



● 1/2 Ca

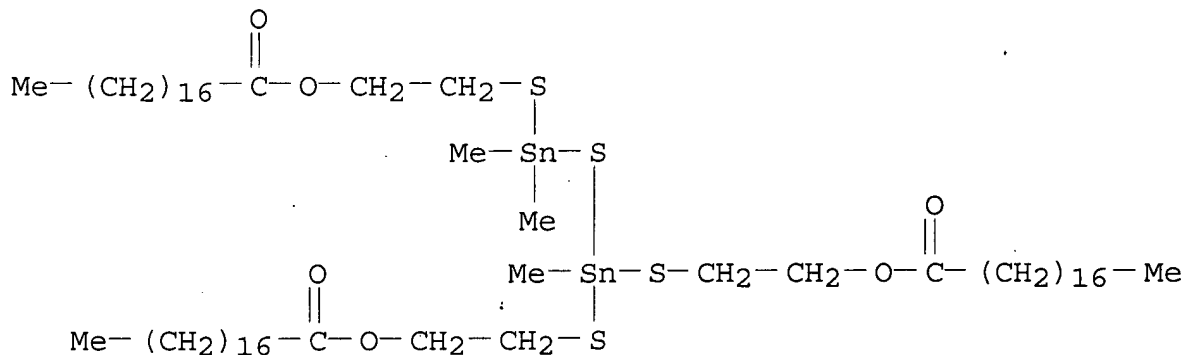
RN 85508-85-6 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA
INDEX NAME)

● 1/2 Ca

RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

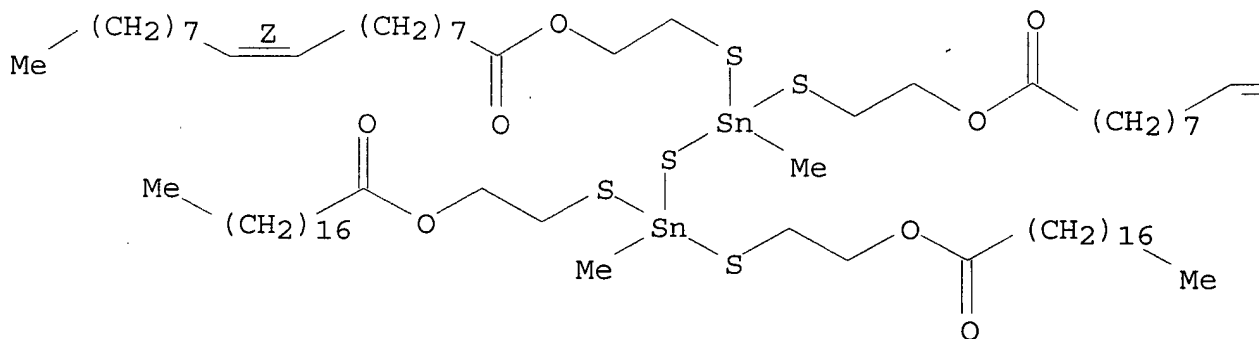


RN 107258-68-4 ZCAPLUS

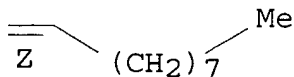
CN 9-Octadecenoic acid (9Z)-, [1,3-dimethyl-3,3-bis[[2-[(1-oxooctadecyl)oxy]ethyl]thio]distannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
 2-mercaptoethyl stearate 95115-35-8 107258-68-4
 (heat stabilizers, for halogenated resins)

L36 ANSWER 2 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1985:96513 Document No. 102:96513 Heat stabilizers for halogenated

resins. Bohen, Joseph Michael; Reifenberg, Gerald Harvey (Pennwalt Corp., USA). Eur. Pat. Appl. EP 124833 A1 19841114, 24 pp.
 DESIGNATED STATES: R: BE, DE, FR, GB, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1984-104741 19840427. PRIORITY: US 1983-489881 19830429.

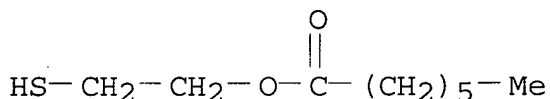
AB Halogen-free heat stabilizer compns. for halogenated resins comprise (A) an aliph. mercaptan and (B) .gtoreq.1 S-contg. organotin compd., whereby .ltoreq.80% of the mercaptan can be replaced by an alkali or alk. earth metal salt of a mercaptan or mercapto acid and the A-B wt. ratio is (1-25):(1-20). Thus, PVC [9002-86-2] 100, paraffin wax 1.2, oxidized polyethylene wax 0.15, Ca stearate 0.6, CaCO3 2.0, TiO2 1.0, and 15:85 methyltin sesquisulfide + 2-mercaptoethyl stearate [27564-01-8] stabilizer 0.5 parts were mixed in a blender, masticated at 370.degree.F and rated visually for discoloration. A resin compn. contg. a binary stabilizer remained white after 15 min of processing, whereas a compn. contg. only 1 of the stabilizers was discolored after 3-12 min..

IT 22909-87-1 27564-01-8 29946-28-9
 30982-97-9 69128-10-5 95115-35-8
 95115-37-0 95115-38-1

(heat stabilizers, for halogenated resins)

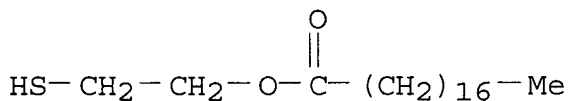
RN 22909-87-1 ZCAPLUS

CN Heptanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



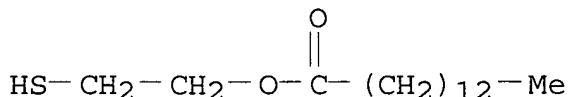
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



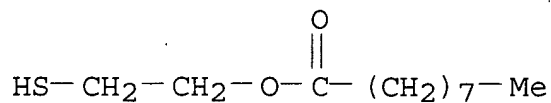
RN 29946-28-9 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



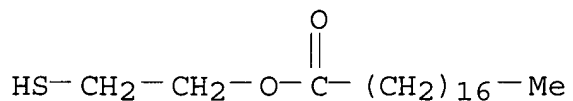
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 69128-10-5 ZCAPLUS

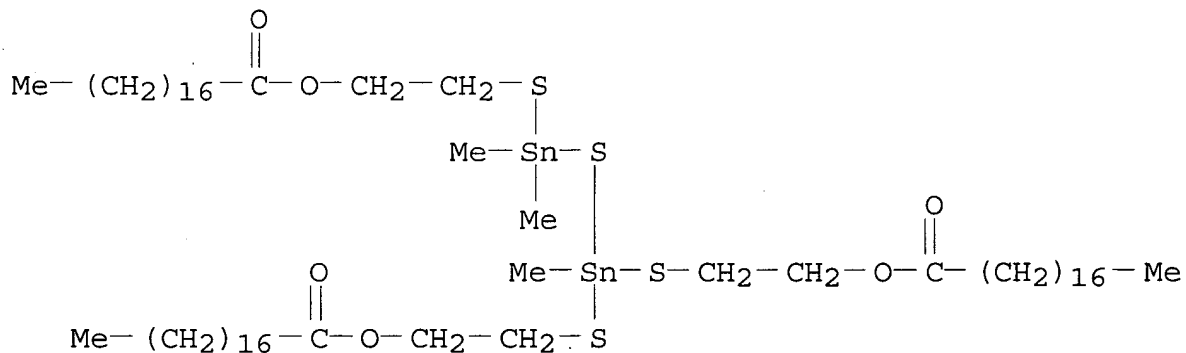
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

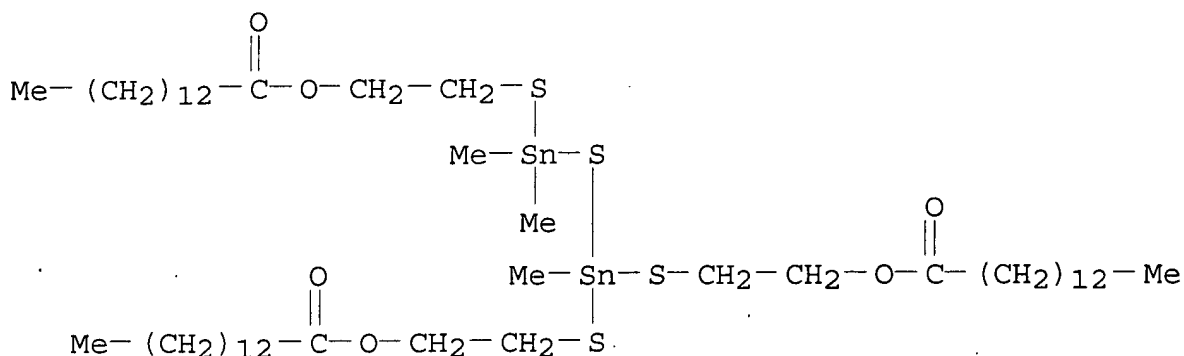
RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

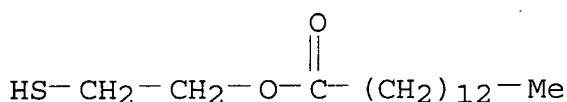


RN 95115-37-0 ZCAPLUS

CN Tetradecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 95115-38-1 ZCAPLUS
 CN Tetradecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 22909-87-1 27564-01-8 29946-28-9
 30982-97-9 69128-10-5 95115-35-8
 95115-37-0 95115-38-1
 (heat stabilizers, for halogenated resins)

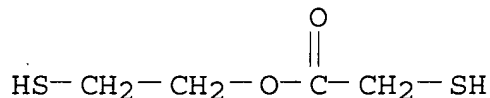
L36 ANSWER 3 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:199211 Document No. 98:199211 Stabilizer compositions for polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958 A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US 1982-345828 19820204.

AB Hydroxythiotin compds., SH-contg. org. compds., and optionally organotin compds. are used as heat stabilizers for halogen-contg. polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100, Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6, AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CCl₇H₃₃)₂ [85758-68-5] 0.02, HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and MeSn(:S)SCH₂CH₂O₂CCl₇H₃₃ [83890-15-7] 0.40 part was rolled at .apprx.193.degree., and the color changed from white to tan-orange after 8.5 min.

IT 38705-47-4 59118-78-4 83890-16-8
 85758-52-7 85758-62-9 85758-64-1
 85758-65-2 85758-67-4
 (heat stabilizers contg., for PVC)

RN 38705-47-4 ZCAPLUS

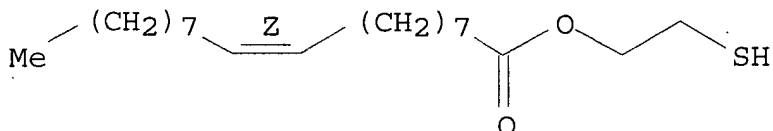
CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

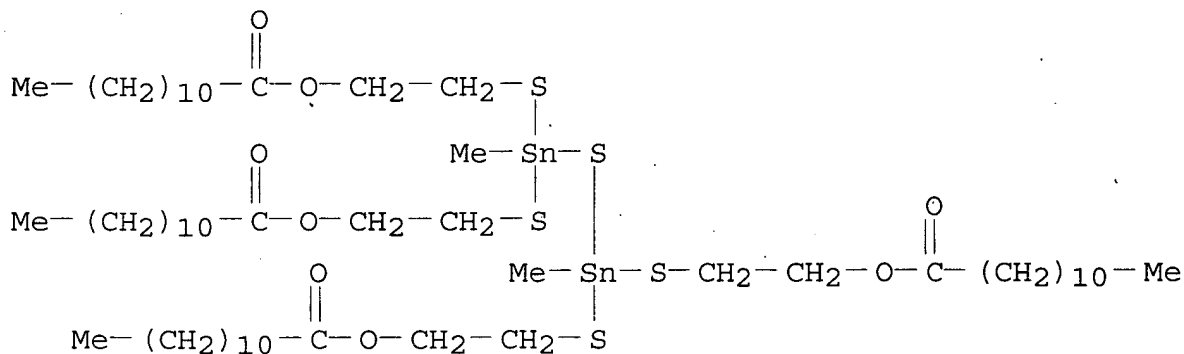
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



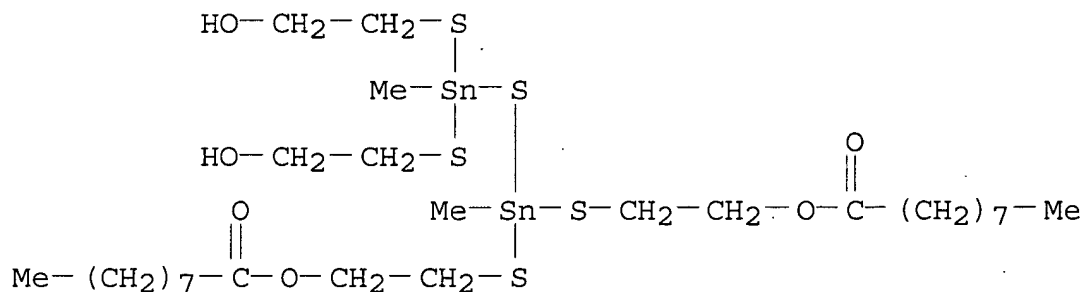
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85758-52-7 ZCAPLUS

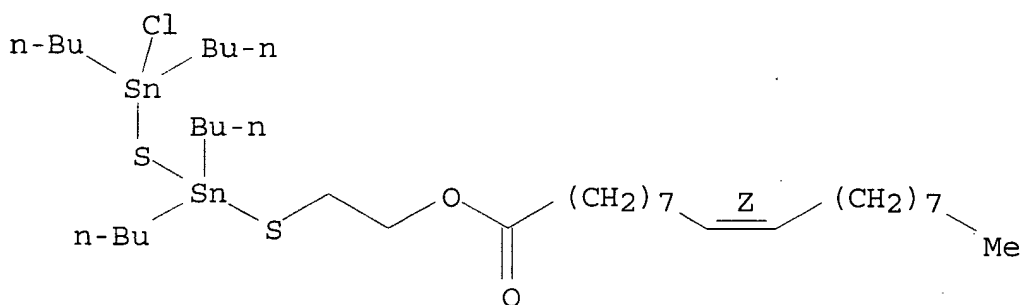
CN Nonanoic acid, [3,3-bis[(2-hydroxyethyl)thio]-1,3-dimethyldistannathianediylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85758-62-9 ZCAPLUS

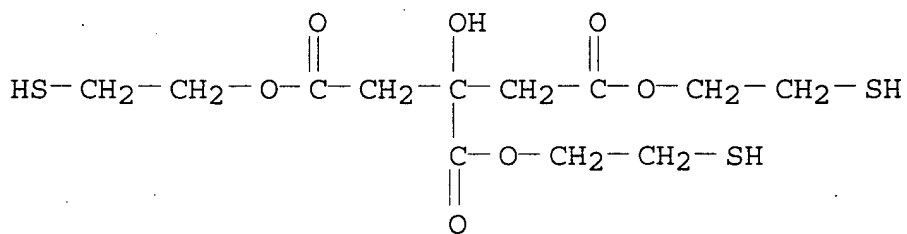
CN 9-Octadecenoic acid (9Z)-, 2-[(1,1,3,3-tetrabutyl-3-chlorodistannathianyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



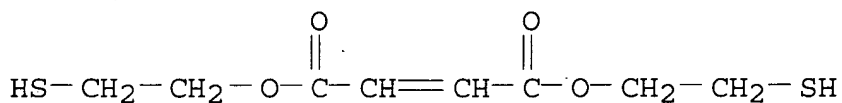
RN 85758-64-1 ZCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



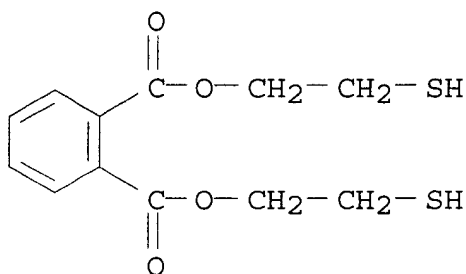
RN 85758-65-2 ZCAPLUS

CN 2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 85758-67-4 ZCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 38705-47-4 59118-78-4 83890-16-8
 85758-52-7 85758-62-9 85758-64-1
 85758-65-2 85758-67-4
 (heat stabilizers contg., for PVC)

L36 ANSWER 4 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5118 Document No. 98:5118 Polymer stabilizing compositions.
 Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.
 PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

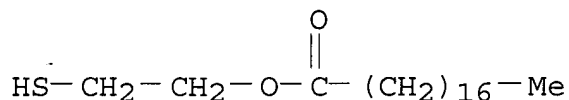
AB Effective heat stabilizers for polymers comprise .gtoreq.1 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO3 3.0, TiO2 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were dry blended at 110.degree.. The mixt. was then roll milled at 193.degree., the color turning from white to tan-orange in 5-6 min.

IT 27564-01-8 59118-78-4 83890-16-8
 83890-17-9

(heat stabilizer compns. contg., for PVC)

RN 27564-01-8 ZCAPLUS

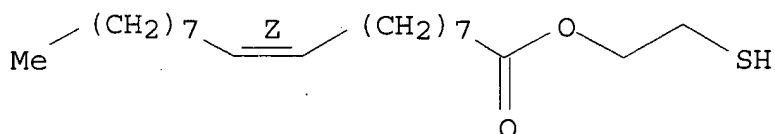
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

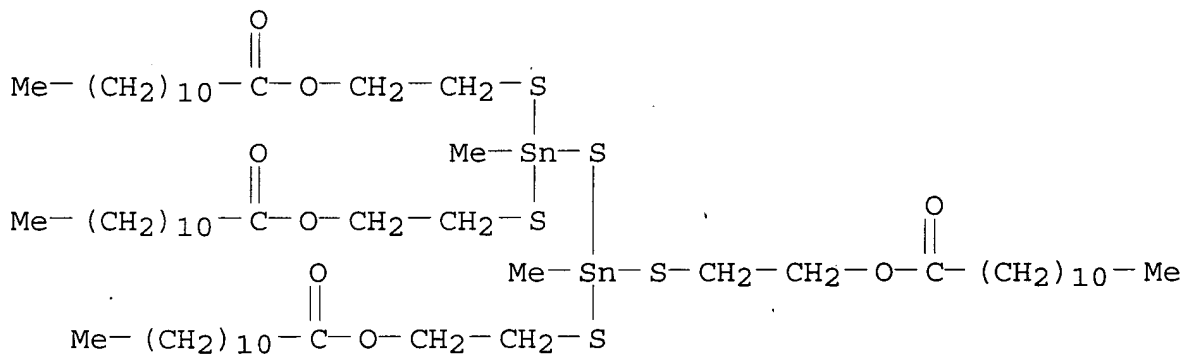
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



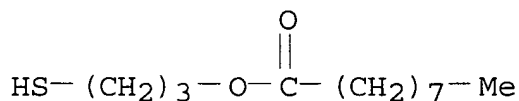
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)

IT 27564-01-8 59118-78-4 83890-16-8
83890-17-9

(heat stabilizer compns. contg., for PVC)

L36 ANSWER 5 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5117 Document No. 98:5117 Polymer stabilizing compositions and their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R.

(Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp.
DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.

(English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225.

PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin
compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane
0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0,
TiO₂ 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene
0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl
3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride
[993-16-8] 0.01 part were dry blended at 110.degree.. The compn.
was then roll milled at 193.degree., requiring 6 min for a color
change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8

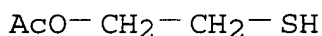
59118-78-4 83890-16-8 83890-17-9

83899-94-9

(heat stabilizer compns. contg., for PVC)

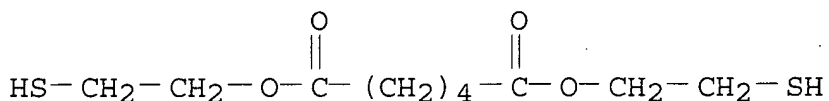
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



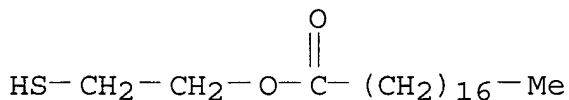
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 27564-01-8 ZCAPLUS

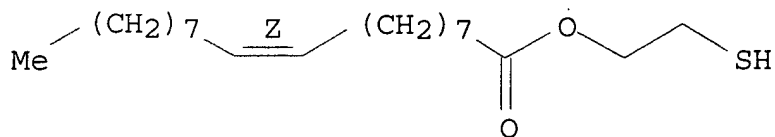
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

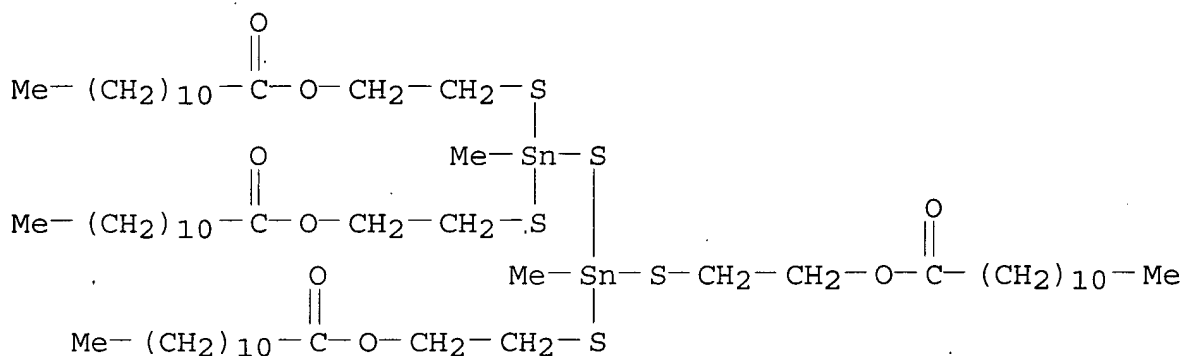
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



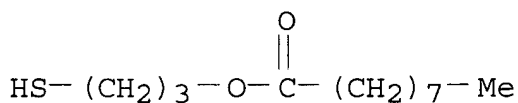
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



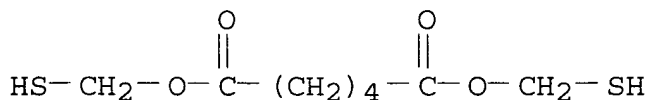
RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



RN 83899-94-9 ZCAPLUS

CN Hexanedioic acid, bis(mercaptomethyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 10194-00-0 27564-01-8

59118-78-4 83890-16-8 83890-17-9

83899-94-9

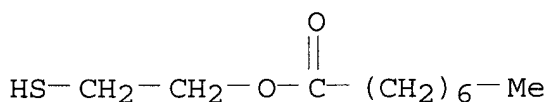
(heat stabilizer compns. contg., for PVC)

L36 ANSWER 6 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1979:104943 Document No. 90:104943 Stabilizers for polymer compositions. Kugele, Thomas Gordon (Cincinnati Milacron Chemicals, Inc., USA). Belg. BE 864976 19780717, 29 pp. (French). CODEN:

BEXXAL. APPLICATION: BE 1978-186002 19780316.

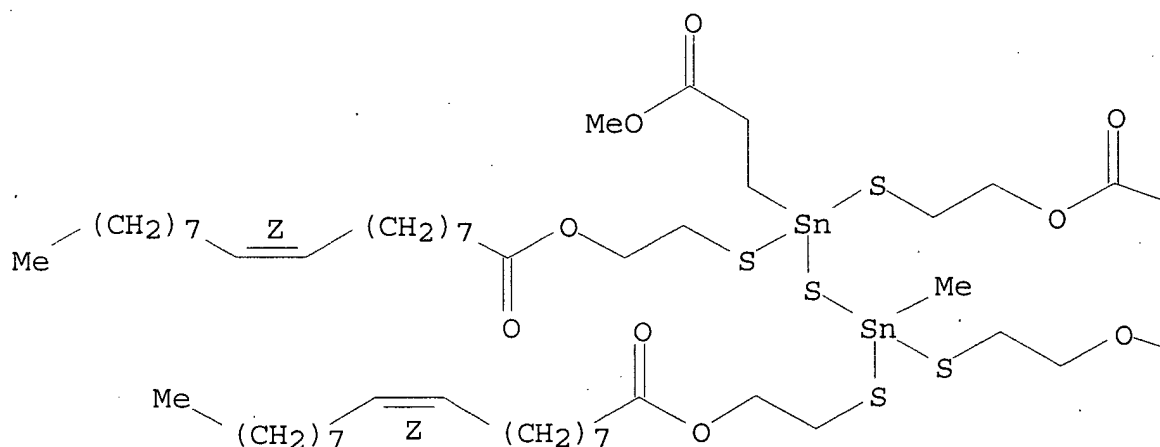
- AB Organotin sulfides or polysulfides prepd. from 2-mercaptoethyl caprylate (I), Na₂S, and acetylacetonyltin trichloride [69138-80-3], from I, Na₂S, bis(3-oxobutyl)tin dichloride, and 3-oxobutyltin trichloride (II), from 2-mercaptoethyl oleate (III) [59118-78-4], Na₂S₂, and 4-oxopentyltin trichloride [69242-48-4], from isooctyl thioglycolate [25103-09-7], Na₂S, and II, or from similar compds. are useful as heat stabilizers for polymers such as PVC [9002-86-2]. Thus, III, NaS, and MeO₂CCH₂CH₂SnCl₃ [59586-13-9] were used to prep. [(ROCH₂CH₂S)₂(MeO₂CCH₂CH₂)Sn]₂S (R = oleoyl) [69242-50-8] which was used as a heat stabilizer in PVC.
- IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide (heat stabilizers, for PVC)
- RN 57813-59-9 ZCAPLUS
- CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



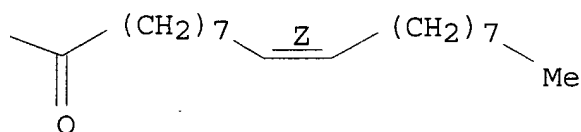
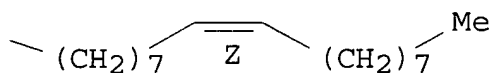
- IT 69242-47-3P (manuf. of, as heat stabilizers for PVC)
- RN 69242-47-3 ZCAPLUS
- CN 9-Octadecenoic acid (9Z)-, [1-(3-methoxy-3-oxopropyl)-3-methyl-1,3-distannathianediylidene]tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



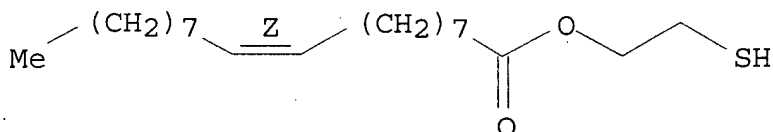
IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide

(heat stabilizers, for PVC)

IT 69242-47-3P

(manuf. of, as heat stabilizers for PVC)

IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

L36 ANSWER 7 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:181132 Document No. 84:181132 Organotin compounds and their use as stabilizers. Kugele, Thomas G. (Cincinnati Milacron, Inc., USA). Ger. Offen. DE 2531308 19760205, 81 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2531308 19750712.

AB Esters of alkyl[(hydroxyalkyl)thio]tin compds. contg. 1-2 C1-20 hydrocarbonyl groups or their sulfides are heat stabilizers for PVC [9002-86-2] with improved storage stability. Thus, adding 40 g 50% NaOH dropwise to 110 g Me2SnCl2 [753-73-1] and 109 g C8H17CO2CH2CH2SH [30982-97-9] stirred in 200 ml H2O at

30-40.degree., stirring 1 hr, adding 32.5 g 60% Na₂S [1313-82-2] dropwise at 25-35.degree., and stirring 1 hr at 35.degree. gives 95.5% (C₈H₁₇CO₂CH₂CH₂SSnMe₂)₂S (I) [59119-13-0].

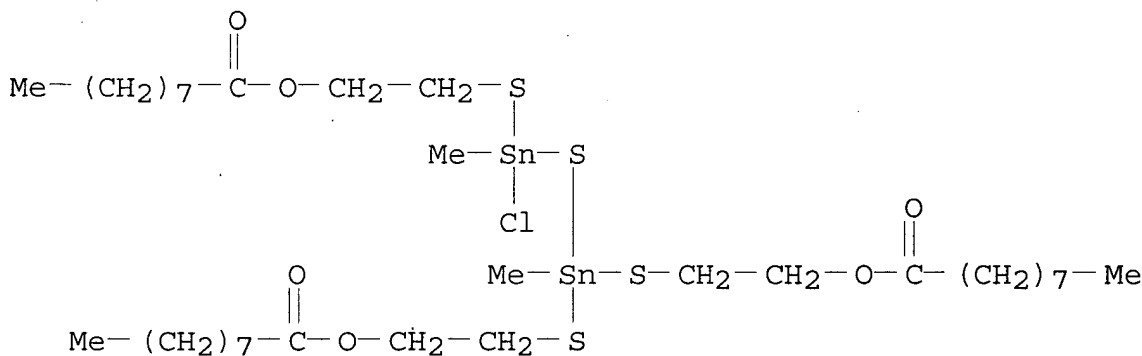
Compounded PVC (Geon 103EP) contg. I equiv. to 150 mg Sn/100 g has color (10 = colorless, 5 = orange-brown, 0 = blackened) >9, >7, 6, 5, 4, 3, and 2 after being calendered 1, 4, 6, 7, 8, 9, and 10 min, resp., at 193.degree..

IT 59118-89-7 59118-90-0 59118-91-1
 59118-95-5 59118-97-7 59118-98-8
 59118-99-9 59119-00-5 59119-01-6
 59119-03-8 59119-04-9 59119-05-0
 59119-07-2 59119-13-0 59126-14-6
 59126-15-7 59126-17-9 59138-46-4
 59158-79-1 59213-33-1

(heat stabilizers, for PVC)

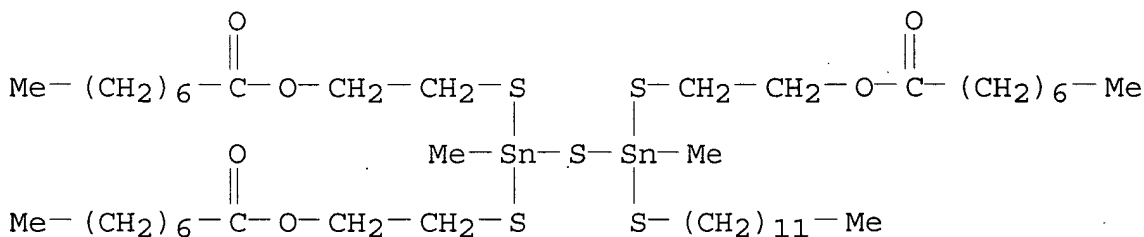
RN 59118-89-7 ZCAPLUS

CN Nonanoic acid, (1-chloro-1,3-dimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



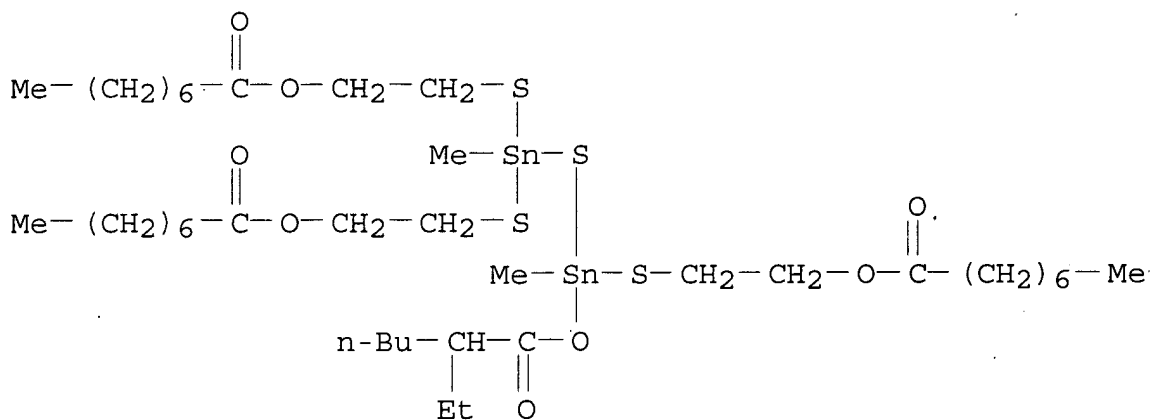
RN 59118-90-0 ZCAPLUS

CN Octanoic acid, [1-(dodecylthio)-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



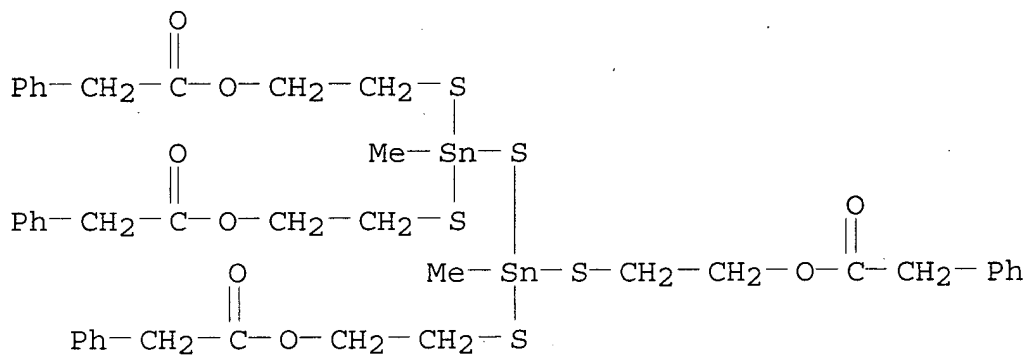
RN 59118-91-1 ZCAPLUS

CN Octanoic acid, [1-[(2-ethyl-1-oxohexyl)oxy]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



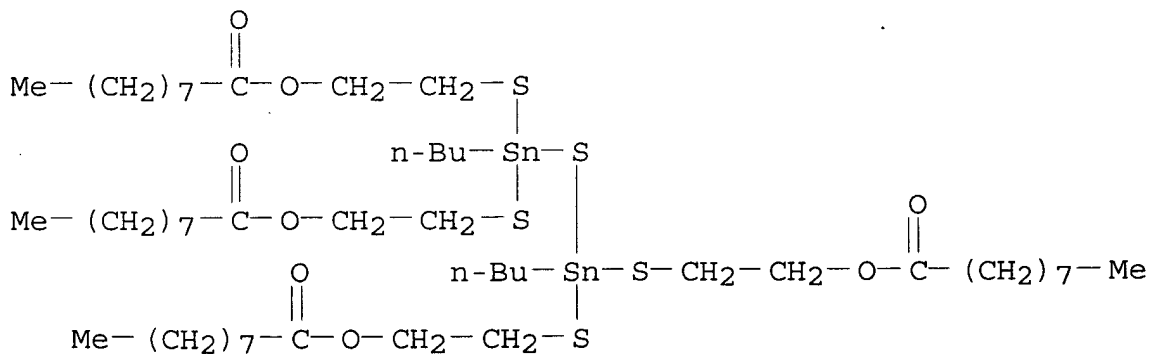
RN 59118-95-5 ZCAPLUS

CN Benzeneacetic acid, (1,3-dimethyl-1,3-distannathianediylidene) tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

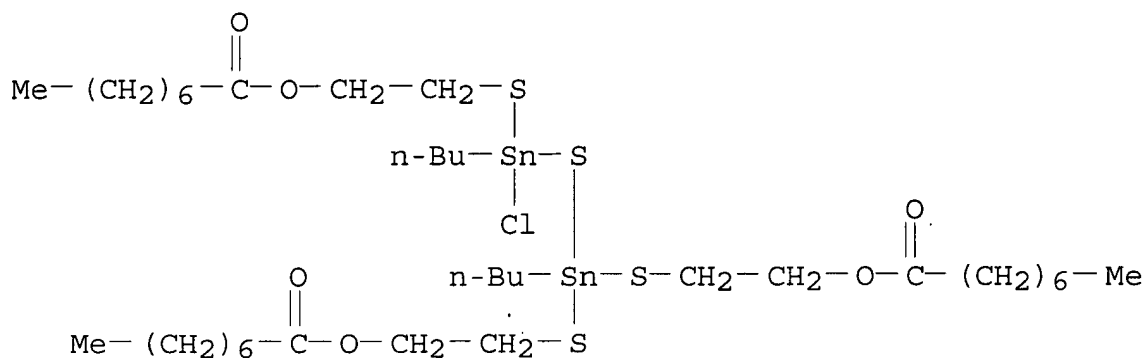


RN 59118-97-7 ZCAPLUS

CN Nonanoic acid, (1,3-dibutyl-1,3-distannathianediylidene) tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



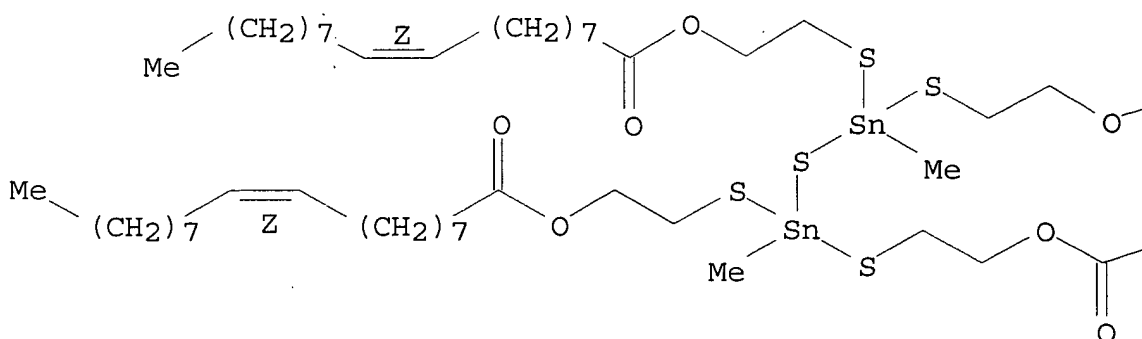
RN	59118-98-8	ZCAPLUS
CN	Octanoic acid, (1,3-dibutyl-1-chloro-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)	



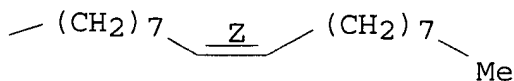
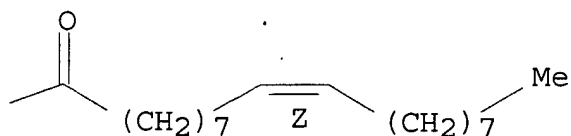
RN	59118-99-9	ZCAPLUS
CN	9-Octadecenoic acid (9Z)-, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI)	
	(CA INDEX NAME)	

Double bond geometry as shown.

PAGE 1-A

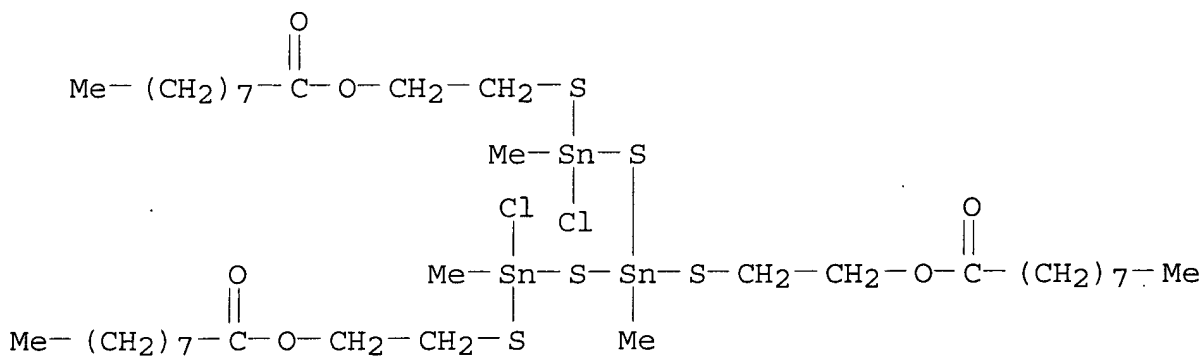


PAGE 1-B



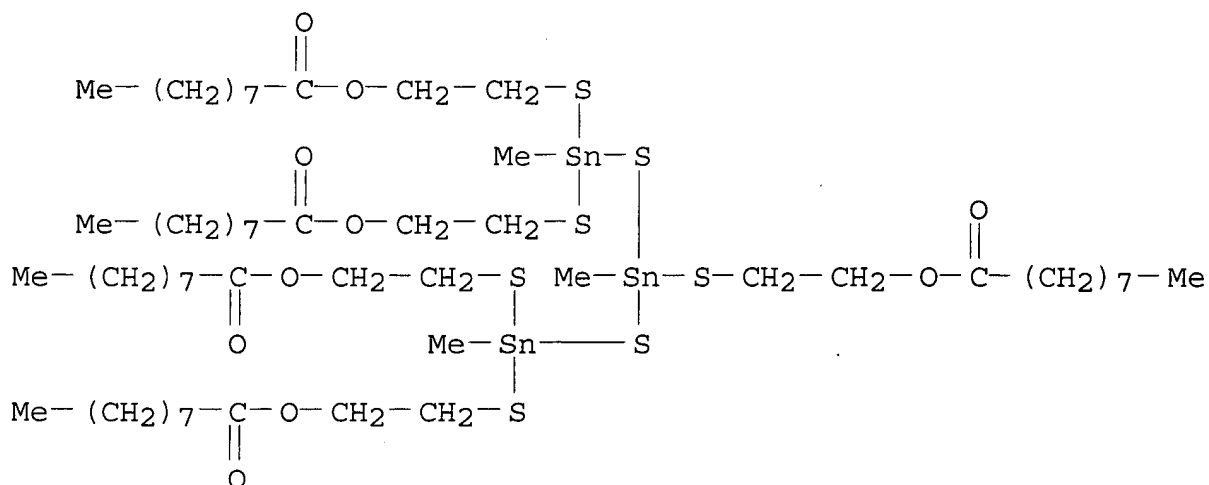
RN 59119-00-5 ZCAPLUS

CN Nonanoic acid, (1,5-dichloro-1,3,5-trimethyl-1,3,5-tristannathianetriyl) tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

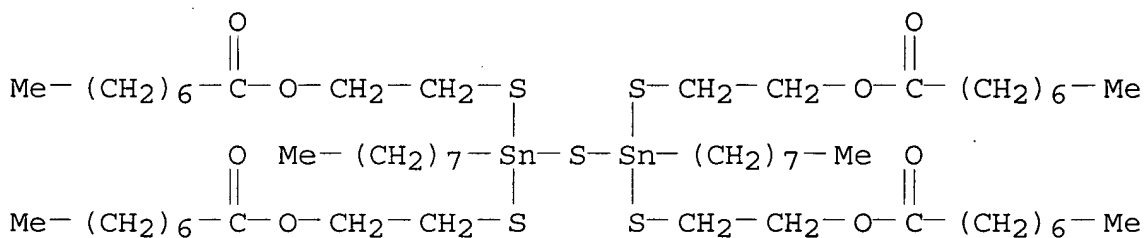


RN 59119-01-6 ZCAPLUS

CN Nonanoic acid, (1,3,5-trimethyl-3-tristannathianyl-1,5-diylidene)pentakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



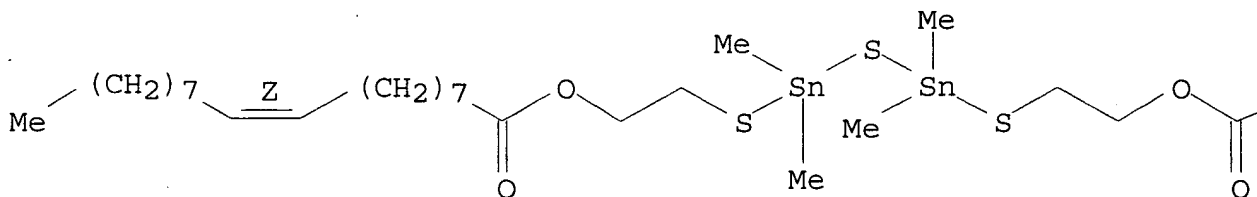
CN	Octanoic acid, (1,3-dioctyl-1,3-distannathianediylidene) tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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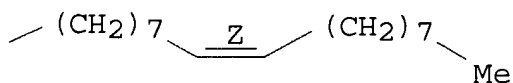
CN 9-Octadecenoic acid (9Z)-, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

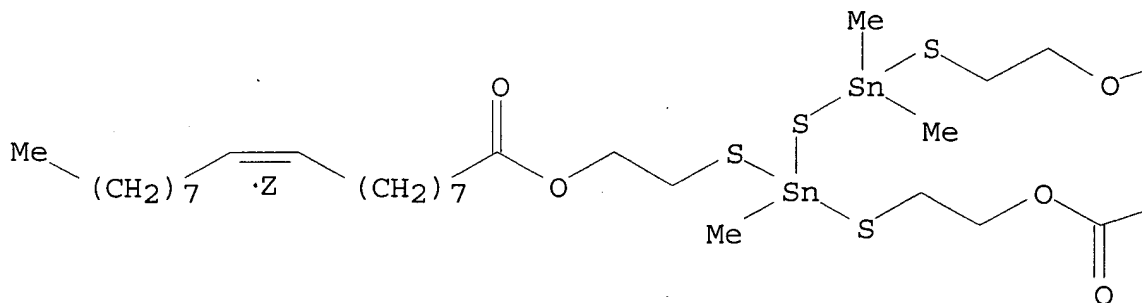


RN 59119-05-0 ZCAPLUS

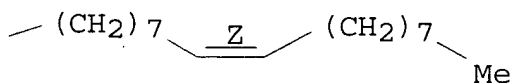
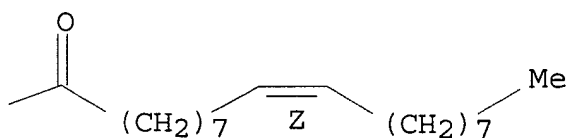
CN 9-Octadecenoic acid (9Z)-, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

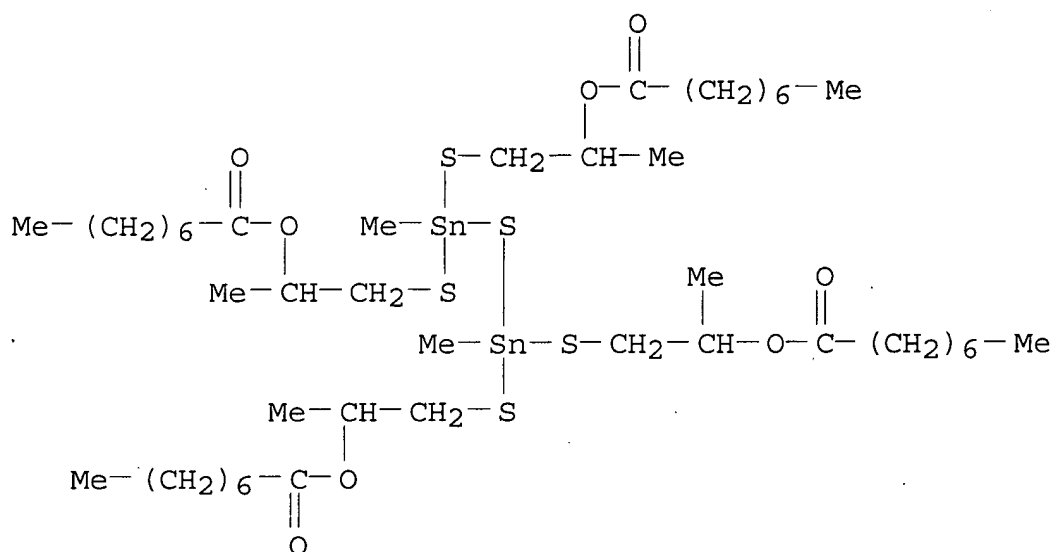


PAGE 1-B



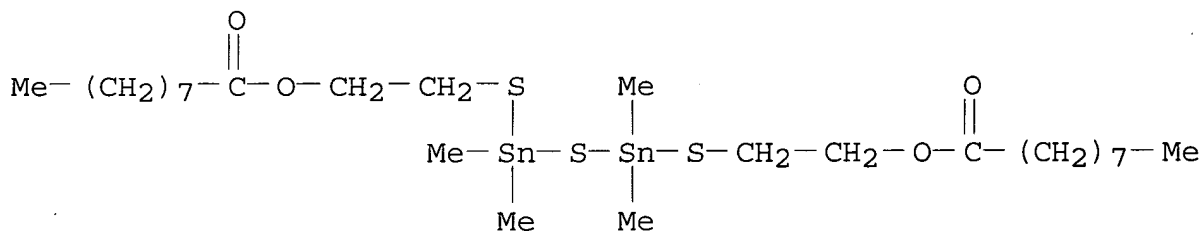
RN 59119-07-2 ZCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis[thio(1-methyl-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)



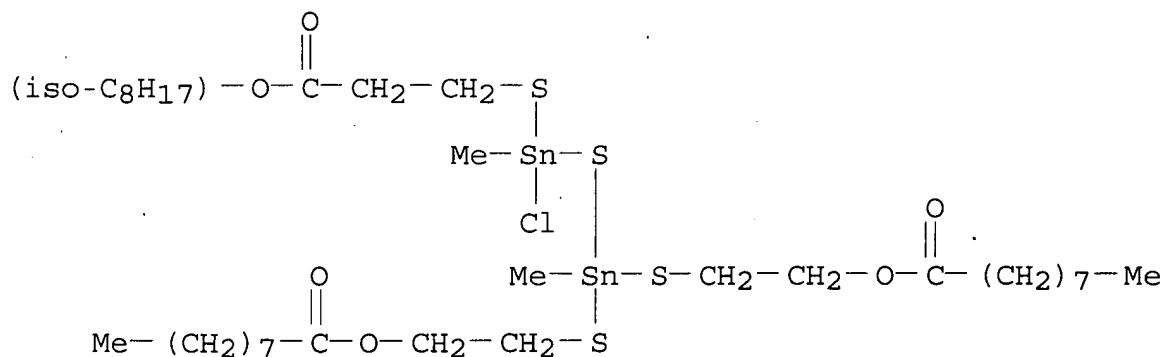
RN 59119-13-0 ZCAPLUS

CN Nonanoic acid, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



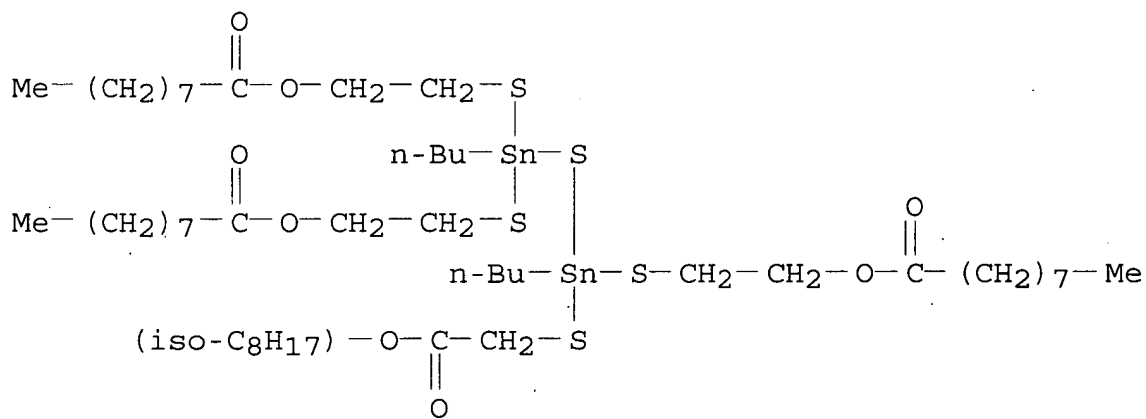
RN 59126-14-6 ZCAPLUS

CN Nonanoic acid, [3-chloro-3-[[3-(isooctyloxy)-3-oxopropyl]thio]-1,3-dimethyldistannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



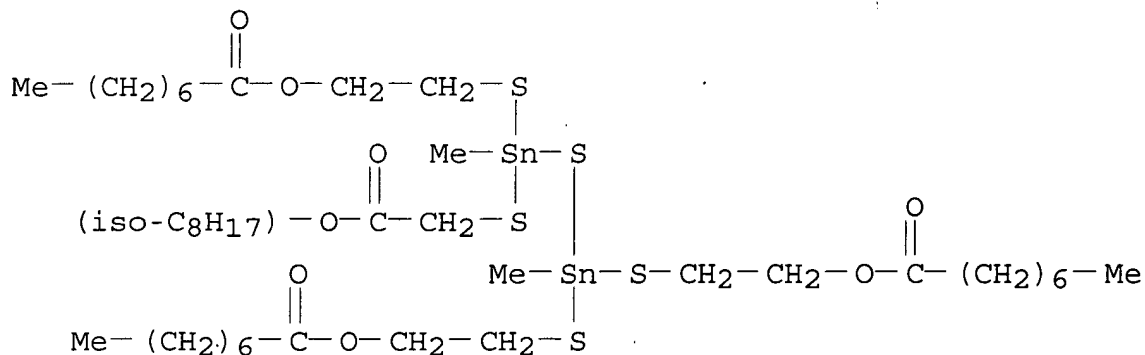
RN 59126-15-7 ZCAPLUS

CN Nonanoic acid, [1,3-dibutyl-1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



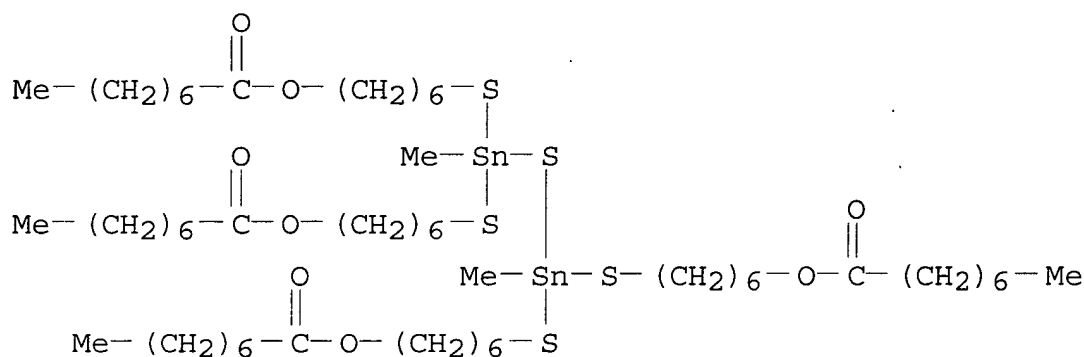
RN 59126-17-9 ZCAPLUS

CN Octanoic acid, [1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



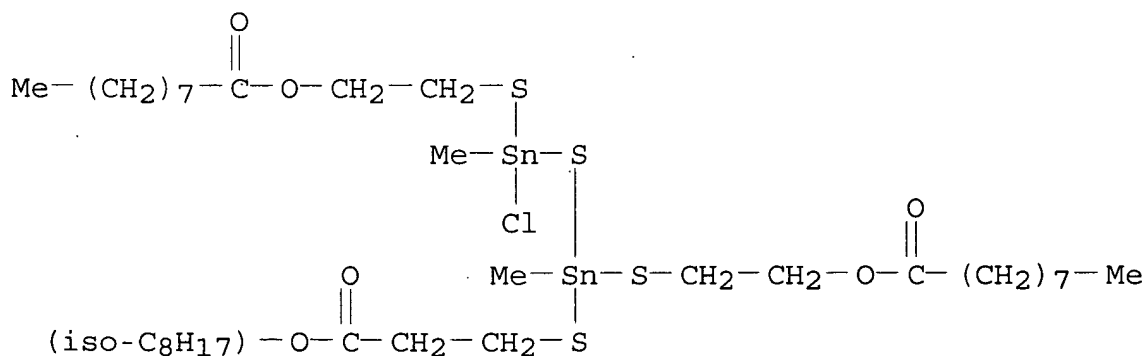
RN 59138-46-4 ZCAPLUS

CN Octanoic acid, [(1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio)]tetra-6,1-hexanediyl ester (9CI) (CA INDEX NAME)



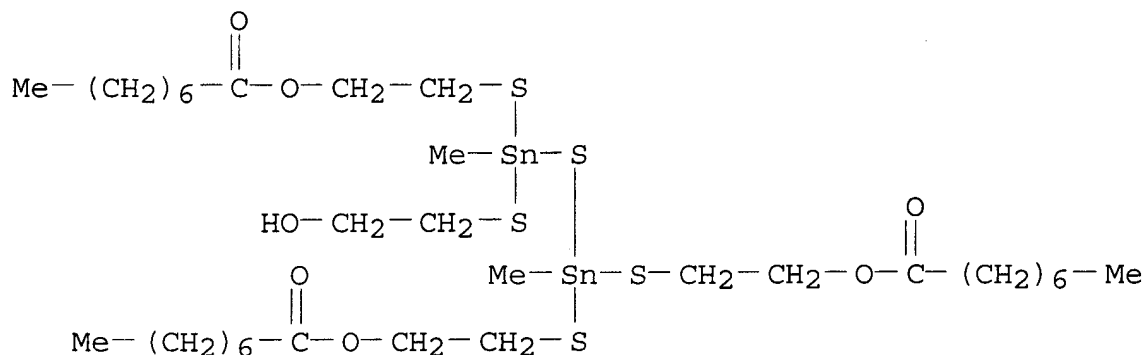
RN 59158-79-1 ZCAPLUS

CN 11-Oxa-4,6,8-trithia-7-stannaeicosanoic acid, 7-chloro-5,7-dimethyl-12-oxo-5-[[2-[(1-oxononyl)oxy]ethyl]thia]-, isooctyl ester (9CI) (CA INDEX NAME)



RN 59213-33-1 ZCAPLUS

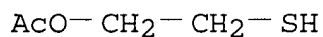
CN Octanoic acid, [1-[(2-hydroxyethyl)thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)

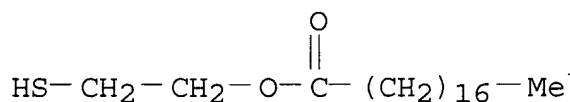
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



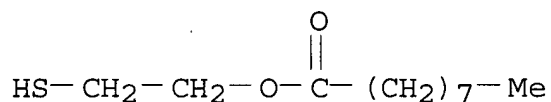
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



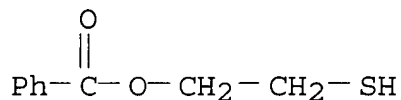
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



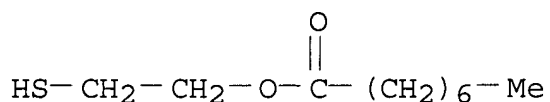
RN 50627-04-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-benzoate (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

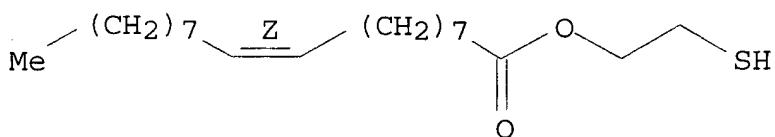
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

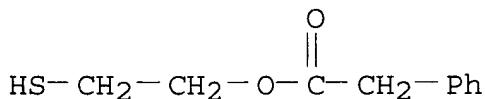
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



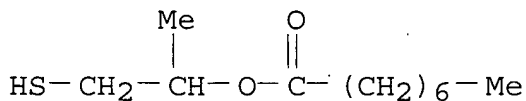
RN 59118-94-4 ZCAPLUS

CN Benzeneacetic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



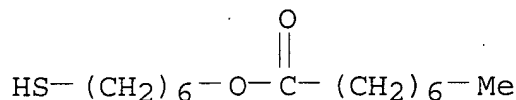
RN 59119-06-1 ZCAPLUS

CN Octanoic acid, 2-mercapto-1-methylethyl ester (9CI) (CA INDEX NAME)



RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



IT 59118-89-7 59118-90-0 59118-91-1
 59118-95-5 59118-97-7 59118-98-8
 59118-99-9 59119-00-5 59119-01-6
 59119-03-8 59119-04-9 59119-05-0
 59119-07-2 59119-13-0 59126-14-6
 59126-15-7 59126-17-9 59138-46-4
 59158-79-1 59213-33-1

(heat stabilizers, for PVC)

IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)

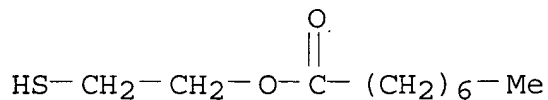
L36 ANSWER 8 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1976:44363 Document No. 84:44363 Organotin mercaptides. Molt, Kenneth
 R. (Cincinnati Milacron Chemicals, Inc., USA). Ger. Offen. DE
 2503554 19750911, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE
 1975-2503554 19750129.

AB Approx. 20 methyltin thioethers, e.g., [(C₈H₁₇O₂CCH₂S)₂SnMe]₂S,
 MeSn(SCH₂CO₂C₈H₁₇)₃, [(C₇H₁₅CO₂CH₂CH₂S)₂SnMe]₂S,
 Me₂Sn(SCH₂Ph)SCH₂CO₂C₈H₁₇, etc. were prep'd. E.g., Me₂SnCl₂ and Na₂S
 gave Me₂SnS, which, with ClCH₂CH₂O₂CC₇H₁₅, gave
 Me₂SnClSCH₂CH₂O₂CC₇H₁₅. This treated with HSCH₂CH₂O₂CC₇H₁₅ gave
 Me₂Sn(SCH₂CH₂O₂CC₇H₁₅)₂. The methyltin thioethers were stabilizers
 for polyvinyl chloride.

IT 57813-59-9P 57813-61-3P
 (prepn. of)

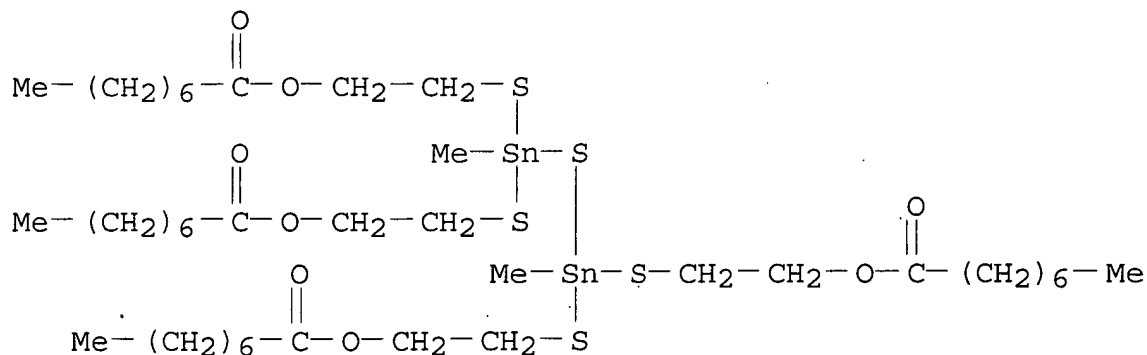
RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 57813-61-3 ZCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(th
 io-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

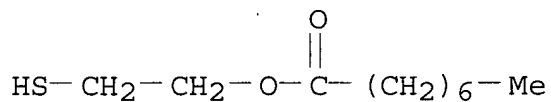


IT 57813-59-9

(reaction with tin chlorides)

RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 57813-59-9P 57813-61-3P

(prepn. of)

IT 57813-59-9

(reaction with tin chlorides)

=> d 144 1-5 cbib abs hitstr hitrn

L44 ANSWER 1 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1993:672627 Document No. 119:272627 Antioxidants containing tin and sulfur for polyolefin compositions. Smith, William L.; Foure, Michel; Ranceze, Dominique; Tozzolino, Pierre (ELF Atochem North America, Inc., USA). U.S. US 5229444 A 19930720, 8 pp. (English). CODEN: USXXAM. APPLICATION: US 1991-745579 19910815.

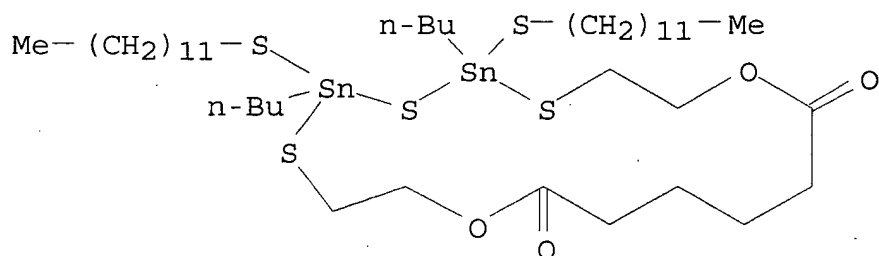
AB Antioxidants $R\text{Sn}(:\text{S})\text{SR}_1$, $R\text{Sn}(\text{X})(\text{SR}_1)\text{SSn}(\text{Y})(\text{SR}_1)\text{R}$, and $[\text{SnR}(\text{SR}_1)\text{S}]_p$ (R, R_1 , X, Y = alkyl, Ph, cyclohexyl, ester-contg. group, hydroxyalkyl, aralkyl; p .gtoreq. 2) are useful in polyolefins for inhibiting thermal degrdn. in air. Polypropene contg. 2000 ppm $[\text{SnBu}(\text{SCl}_2\text{H}_{25})\text{S}]_p$, prepd. from BuSnCl_3 , Na_2S , and $\text{HSCl}_2\text{H}_{25}$, resisted degrdn. for .gtoreq.50 min at 200.degree. in the presence of O.

IT 76192-58-0

(antioxidants, for polyolefins)

RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione, 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



IT 76192-58-0

(antioxidants, for polyolefins)

L44 ANSWER 2 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

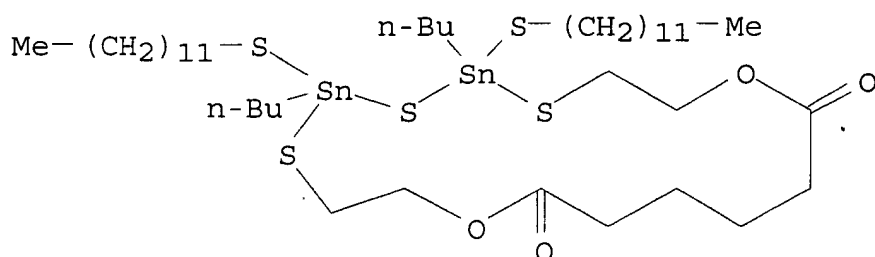
1991:584672 Document No. 115:184672 Tin sulfide compounds as antioxidants for polyolefin. Smith, William L.; Foure, Michel J.; Ranceze, Dominique; Tozzolino, Pierre (M and T Chemicals Inc., USA). Can. Pat. Appl. CA 2001633 AA 19910427, 22 pp. (English). CODEN: CPXXEB. APPLICATION: CA 1989-2001633 19891027.

AB The title antioxidants comprise $\text{R}_1\text{SSn}(:\text{S})\text{R}$, $\text{R}_1\text{SSnRXSSnRYSR}_1$ or $[\text{SnR}(\text{SR}_1)\text{S}]_p$ (R, R_1 , X, Y = alkyl, Ph, cyclohexyl, carboxylate ester, hydroxyalkyl, aralkyl, optionally substituted or cyclic; p .gtoreq.2). NH_4OH (17.4 parts) was added dropwise with stirring to a mixt. of BuSnCl_3 148.5, $\text{n-C}_{12}\text{H}_{25}\text{SH}$ 60.7, PhMe 217, and H_2O 100 parts, the mixt. was heated to 70.degree. and stirred 0.5 h, cooled to <50.degree., mixed with Na_2S slowly, heated to 60-70.degree. and stirred 0.5 h, giving .apprx.111 g $[\text{SnBu}(\text{S-n-C}_{12}\text{H}_{25})\text{S}]_p$ (I). Polypropylene contg. 2000 ppm I had degrdn. induction time in 200.degree. O atm >50 min, vs. 12 using a hindered phenol.

IT 76192-58-0

(antioxidants, for polyolefins)

RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione,
5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)IT 76192-58-0
(antioxidants, for polyolefins)

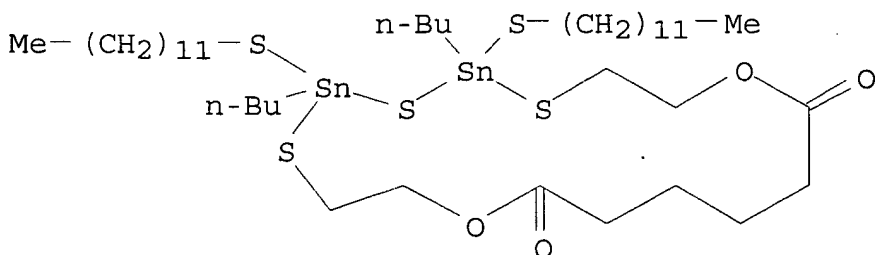
L44 ANSWER 3 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1991:515795 Document No. 115:115795 Antioxidant-polyolefin compositions. Smith, William L.; Ranceze, Dominique; Foure, Michel J.; Tozzolino, Pierre (Atochem North America, Inc., USA). Eur. Pat. Appl. EP 426912 A1 19910515, 17 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1989-311467 19891106.

AB The title compns. contain antioxidants $R_1SSn(R):S$, $[R_1SSn(R)(X)]_2S$, or $[Sn(R)(SR_1)S]_n$ (I; R, R_1 , X = alkyl, Ph, cyclohexyl, mono- or polycarboxylic acid ester, hydroxyalkyl, aralkyl; n .gtoreq. 2). Thus, a polypropylene sheet contg. 0.2% I (R = Bu, R_1 = lauryl) (II) prepd. from $BuSnCl_3$ and lauryl mercaptan in the presence of NH_4OH and hydrated Na sulfide had induction time (time necessary to observe degrdn. in O_2 atm. at 200.degree.) >50 min, vs. 12 for a sheet contg. 0.1% hindered phenol and 0.2% distearyl thiodipropionate instead of II.

IT 76192-58-0
(antioxidants, for polyolefins)

RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione,
5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)

IT 76192-58-0

(antioxidants, for polyolefins)

L44 ANSWER 4 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1990:632757 Document No. 113:232757. Metal compounds and phosphates as melt stabilizers for halogenated polymers. Silbermann, Joseph; Smith, William L. (M and T Chemicals Inc., USA). PCT Int. Appl. WO 9003999 A1 19900419, 48 pp. DESIGNATED STATES: W: AU, BR, DK, JP, KR; RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1989-US4461 19891006. PRIORITY: US 1988-256003 19881007.

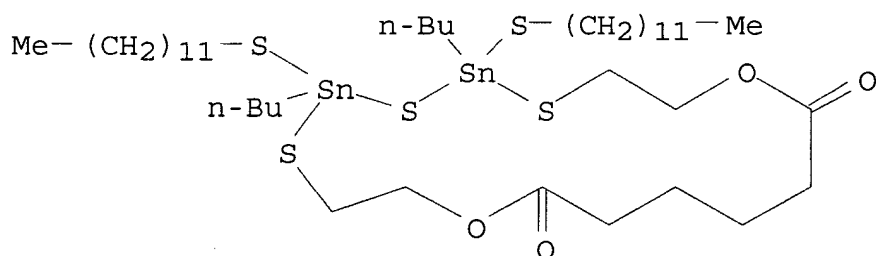
AB The title stabilizer mixts. have sp. surface >0.5 m²/g. Thus, a PVC compn. contg. 0.83 phr Na₂HPO₄ and 1.2 phr (C₈H₁₇)₂Sn(SCH₂CO₂C₈H₁₇)₂ was stable in Brabender mixing at 60-120 rpm for 10.3 min; vs. 7.2 with 1.05 phr organotin compd. mixt.

IT 76192-58-0

(heat stabilizers, for halogenated polymers)

RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione, 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



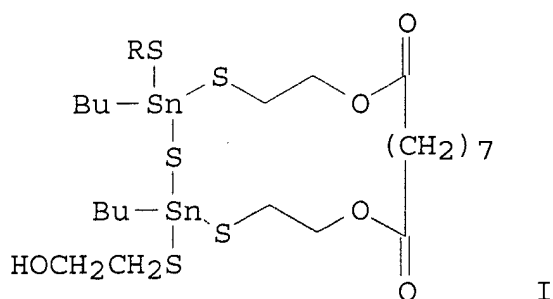
IT 76192-58-0

(heat stabilizers, for halogenated polymers)

L44 ANSWER 5 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1981:47482 Document No. 94:47482 Organotin compounds and resins or polymers stabilized with them. Dworking, Robert Dally; Larkin, William Albert (M and T Chemicals Inc., USA). Eur. Pat. Appl. EP 11456 19800528, 101 pp. (English). CODEN: EPXXDW. APPLICATION: EP 1979-302520 19791109.

GI



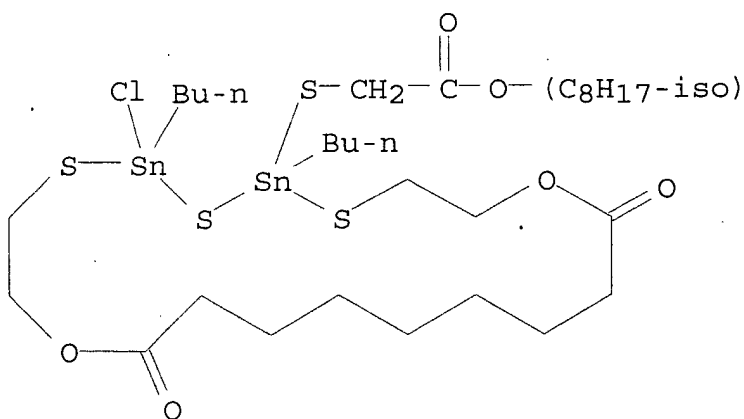
AB Approx. 20 organotin sulfide esters were prepd. by various procedures. Thus, 0.4 mol BuSnCl₃, 0.8 mol NH₄OH, 0.2 mol HSCH₂CH₂OH, 0.2 mol Me(CH₂)₁₁SH, 0.2 mol HSCH₂CH₂O₂C(CH₂)₇CO₂CH₂CH₂SH, and 233 mol H₂O, was heated to 70.degree. 0.5 h by 0.2 mol Na₂S addn., the mixt. heated at 75.degree. 0.5 h, and the pH adjusted to 7 with NH₄OH to give 88 g I (R = n-dodecyl). Also prepd. were [(BuSn(S)SCH₂CH₂O)]₄M (M = Si, Ti), [BuSn(S)SCH₂CH₂O)]₃M (M = B, P, Al), and I (R = CH₂CO₂(CH₂)₅CHMe₂). The compds. prepd. were useful as heat stabilizers for halogenated polymers such as PVC.

IT 76185-05-2

(activity as heat stabilizer for polymers)

RN 76185-05-2 ZCAPLUS

CN Acetic acid, [(5,7-dibutyl-7-chloro-12,20-dioxo-1,11-dioxa-4,6,8-trithia-5,7-distannacycloeicosan-5-yl)thio]-, isooctyl ester (9CI)
(CA INDEX NAME)

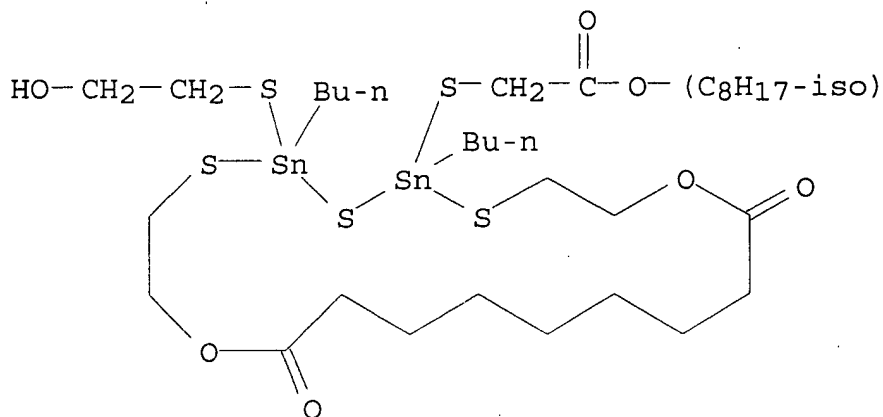


IT 76185-06-3P 76191-18-9P 76192-58-0P
76192-59-1P 76192-60-4P 76192-61-5P
76192-62-6P 76192-64-8P 76207-95-9P
76233-84-6P

(prepn. and activity as heat stabilizer for polymers)

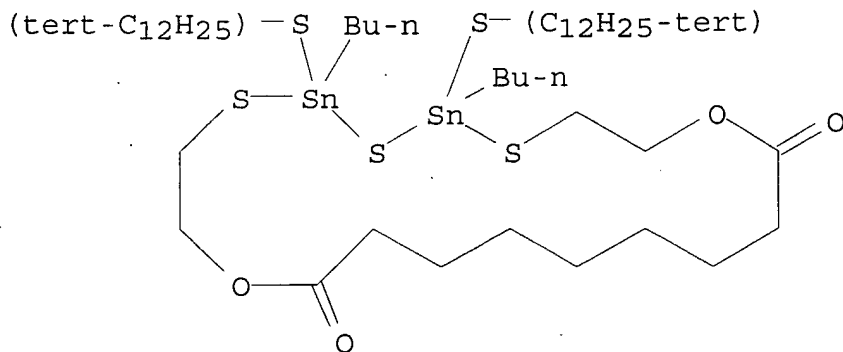
RN 76185-06-3 ZCAPLUS

CN Acetic acid, [[5,7-dibutyl-7-[(2-hydroxyethyl)thio]-12,20-dioxo-1,11-dioxa-4,6,8-trithia-5,7-distannacycloeicosan-5-yl]thio]-, isooctyl ester (9CI) (CA INDEX NAME)



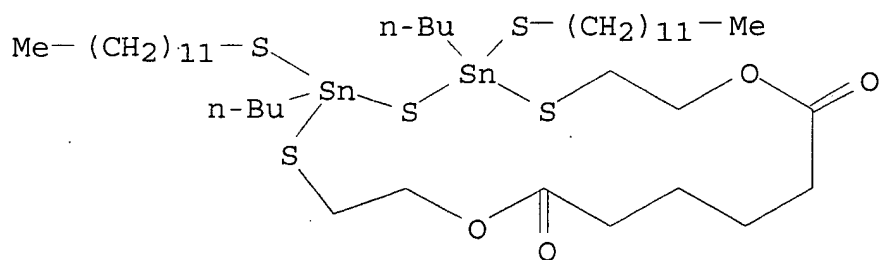
RN 76191-18-9 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione, 5,7-dibutyl-5,7-bis(tert-dodecylthio)- (9CI) (CA INDEX NAME)

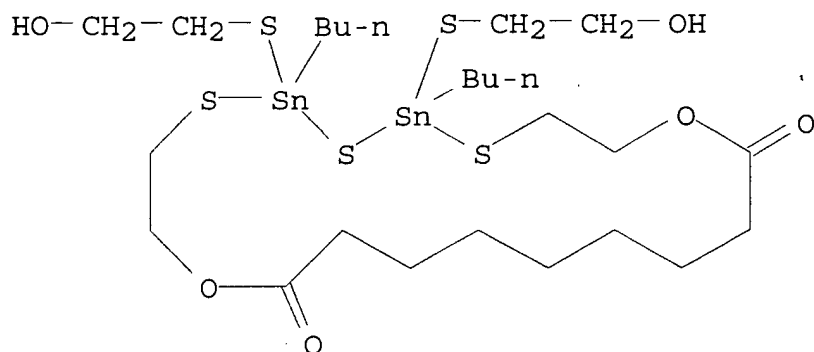


RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione, 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



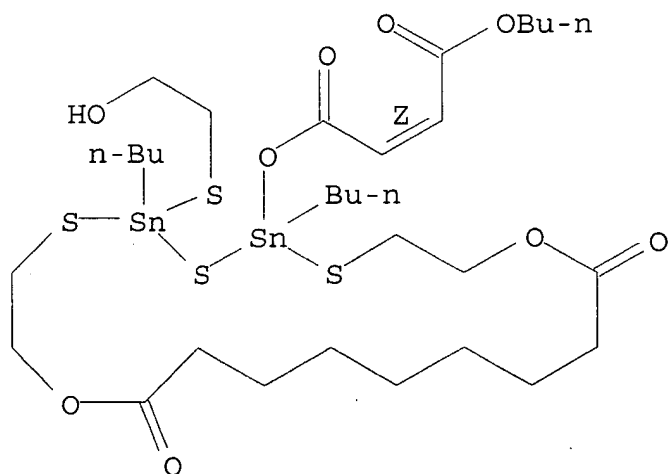
RN 76192-59-1 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5,7-bis[(2-hydroxyethyl)thio]- (9CI) (CA INDEX NAME)

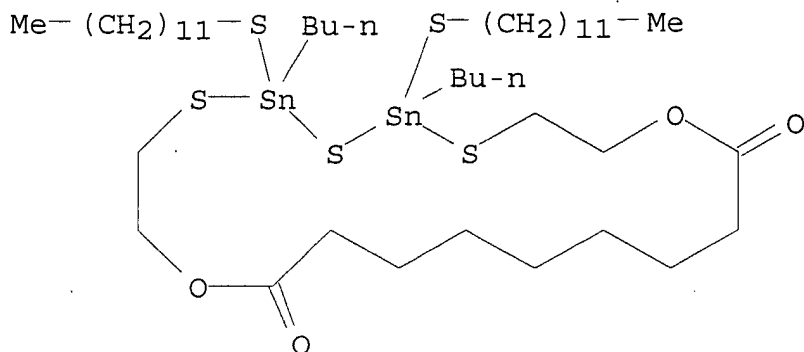
RN 76192-60-4 ZCAPLUS

CN 2-Butenedioic acid (2Z)-, butyl 5,7-dibutyl-7-[(2-hydroxyethyl)thio]-
12,20-dioxo-1,11-dioxa-4,6,8-trithia-5,7-distannacycloeicosan-5-yl
ester (9CI) (CA INDEX NAME)

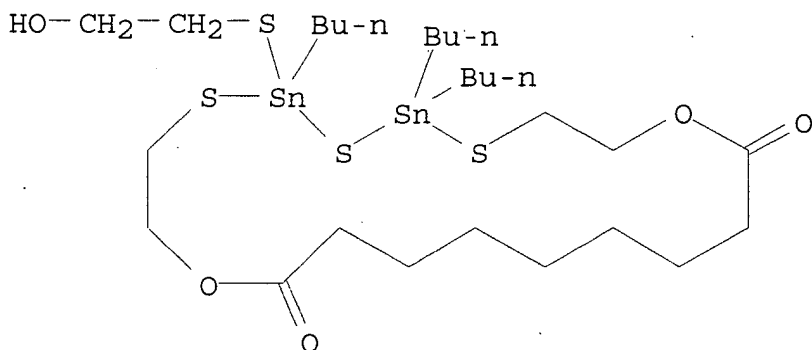
Double bond geometry as shown.



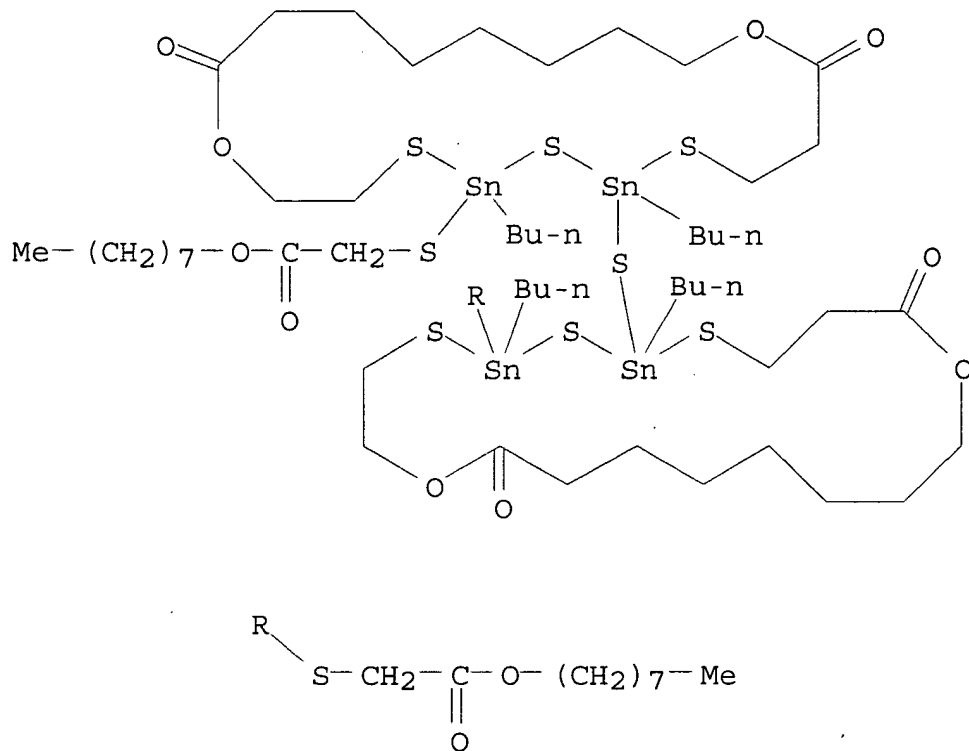
RN 76192-61-5 ZCAPLUS
 CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
 5,7-dibutyl-5,7-bis(dodecylthio) - (9CI) (CA INDEX NAME)



RN 76192-62-6 ZCAPLUS
 CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
 5,5,7-tributyl-7-[(2-hydroxyethyl)thio] - (9CI) (CA INDEX NAME)

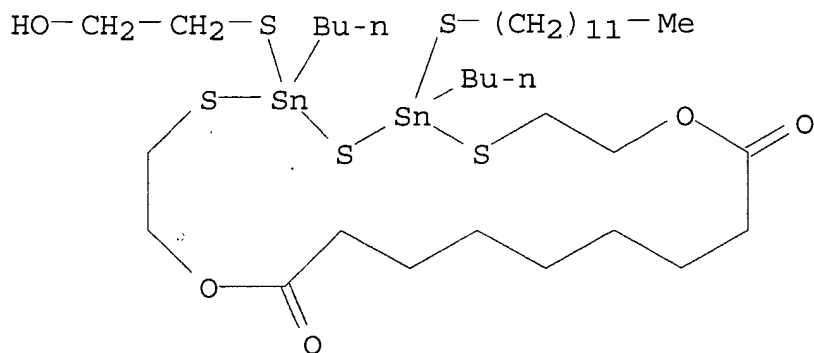


RN 76192-64-8 ZCAPLUS
 CN Acetic acid, 2,2'-[thiobis[(5,7-dibutyl-11,20-dioxo-1,12-dioxa-4,6,8-
 trithia-5,7-distannacycloeicosane-7,5-diyl)thio]]bis-, dioctyl ester
 (9CI) (CA INDEX NAME)



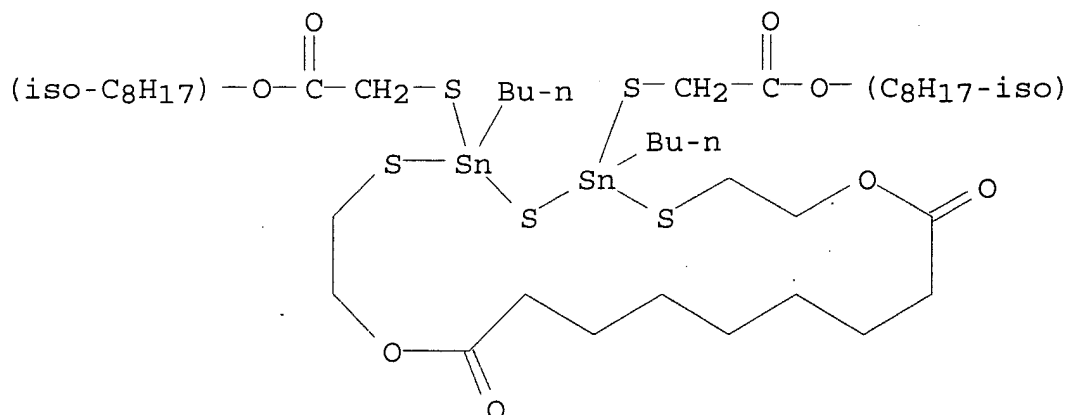
RN 76207-95-9 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5-(dodecylthio)-7-[(2-hydroxyethyl)thio]-(9CI) (CA
INDEX NAME)



RN 76233-84-6 ZCAPLUS

CN Acetic acid, 2,2'-[(5,7-dibutyl-12,20-dioxo-1,11-dioxa-4,6,8-trithia-
5,7-distannacycloeicosane-5,7-diyl)bis(thio)]bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

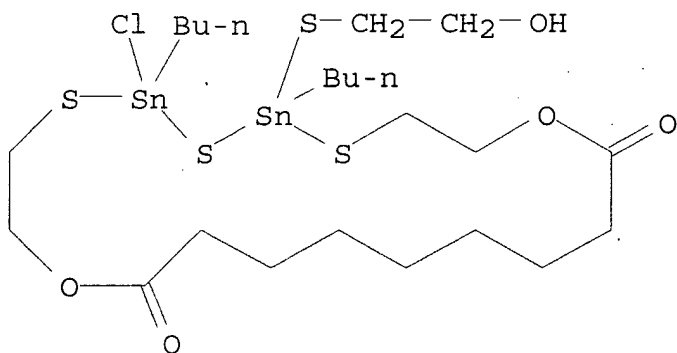


IT 76192-63-7P 76192-68-2P

(prepn. of)

RN 76192-63-7 ZCAPLUS

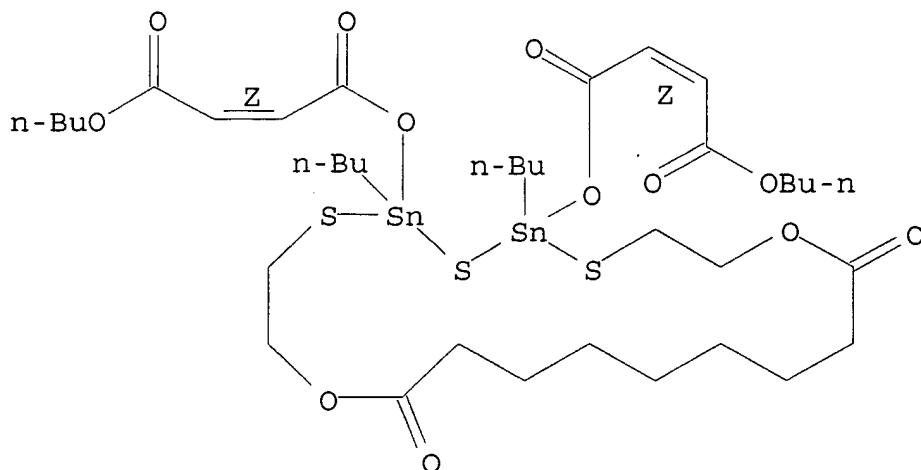
CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5-chloro-7-[(2-hydroxyethyl)thio]- (9CI) (CA INDEX
NAME)



RN 76192-68-2 ZCAPLUS

CN 2-Butenedioic acid (2Z)-, 5,7-dibutyl-12,20-dioxo-1,11-dioxa-4,6,8-
trithia-5,7-distannacycloeicosane-5,7-diyl dibutyl ester (9CI) (CA
INDEX NAME)

Double bond geometry as shown.

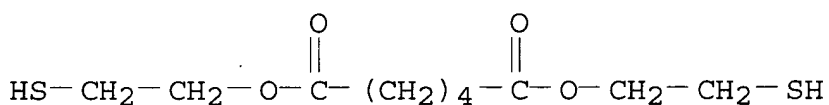


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

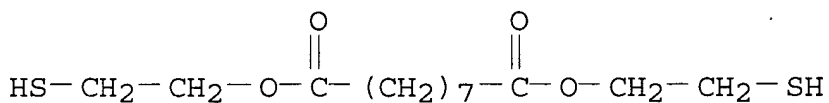
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 76185-05-2

(activity as heat stabilizer for polymers)

IT 76185-06-3P 76191-18-9P 76192-58-0P

76192-59-1P 76192-60-4P 76192-61-5P

76192-62-6P 76192-64-8P 76207-95-9P

76233-84-6P

(prepn. and activity as heat stabilizer for polymers)

IT 76192-63-7P 76192-68-2P

(prepn. of)

IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

=> d 136 1-8 cbib abs hitstr hitrn

L36 ANSWER 1 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

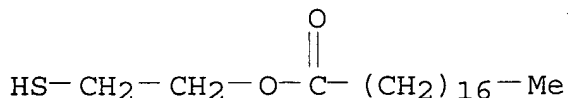
1987:120858 Document No. 106:120858 Sulfur compound-organotin compound mixtures as heat stabilizers for halogenated resins. Bohen, Joseph M. (Pennwalt Corp. , USA). Eur. Pat. Appl. EP 208044 A2 19870114, 22 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1986-100014 19860102. PRIORITY: US 1985-751392 19850703.

AB Mixts. for the title use comprise (a) alkali or alk. earth metal salts of mercaptans or mercapto acids, optionally .ltoreq.96% replaced by overbased org. complexes of metal bases, and (b) R1a(R2S)3-aSnSmSnR3b(SR4)3-b [R1-4 = (un)substituted alkyl or aryl, a,b = 1 or 2, m = 1-10] or combinations of organotin sulfides and .ltoreq.99.5% organotin mercaptides with CSnS groups. A mixt. of PVC 100, 10:90 Et acrylate-Me acrylate copolymer processing aid 2.0, acrylic impact modifier 7.0, wax 1.0, partially sapon. ester was 0.1, Ca stearate 1.5, TiO2 10.0, dimethyltin bis(2-mercaptoethyl stearate) 0.45, methyltin tris(2-mercaptoethyl stearate) 0.20, methyltin sesquisulfide 0.10, and Ba bis(2-mercaptoethyl stearate) 0.75 parts had Brabender-dynamic-heat-stability failure time 28 min.

IT 69128-10-5, Barium 2-mercaptoethyl stearate
85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
, Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
2-mercaptoethyl stearate 95115-35-8 107258-68-4
(heat stabilizers, for halogenated resins)

RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

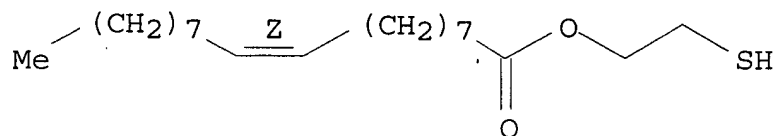


● 1/2 Ba

RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

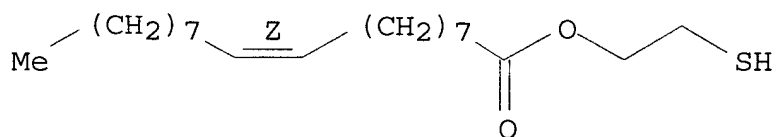


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

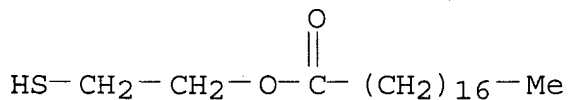
Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

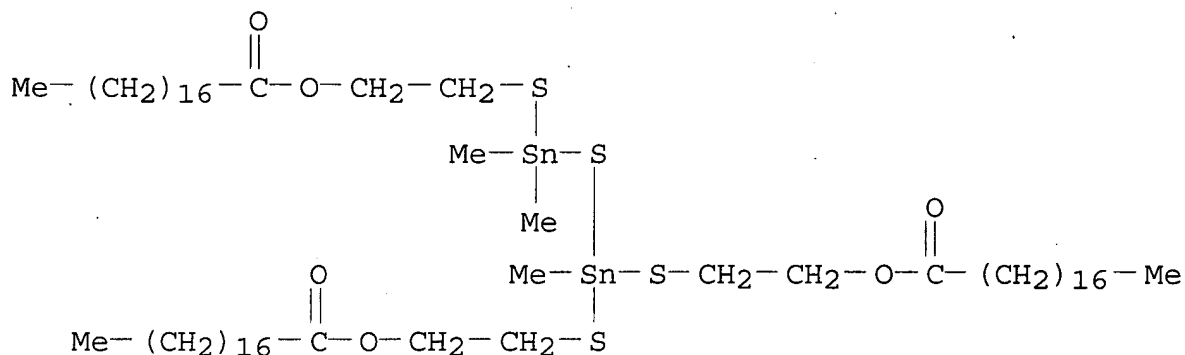
CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA
INDEX NAME)



● 1/2 Ca

RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

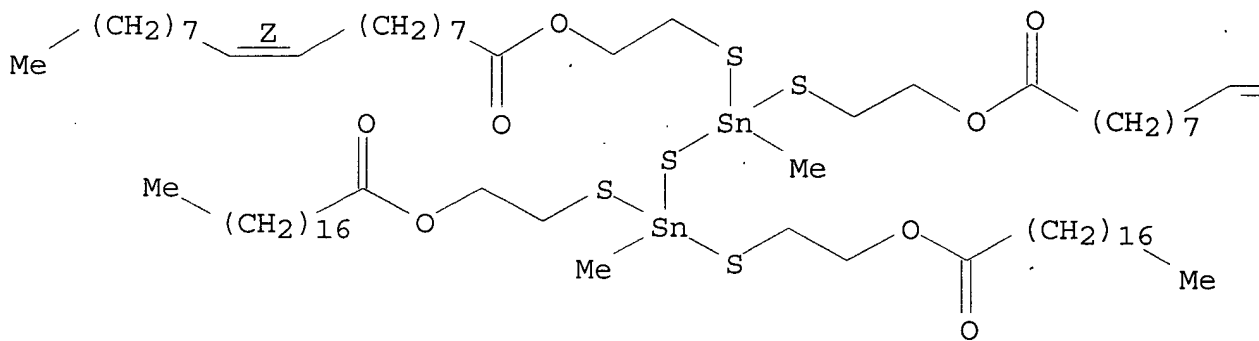


RN 107258-68-4 ZCAPLUS

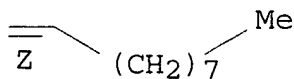
CN 9-Octadecenoic acid (9Z)-, [1,3-dimethyl-3,3-bis[[2-[(1-oxooctadecyl)oxy]ethyl]thio]distannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
 2-mercaptoethyl stearate 95115-35-8 107258-68-4
 (heat stabilizers, for halogenated resins)

L36 ANSWER 2 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1985:96513 Document No. 102:96513 Heat stabilizers for halogenated

resins. Bohen, Joseph Michael; Reifenberg, Gerald Harvey (Pennwalt Corp., USA). Eur. Pat. Appl. EP 124833 A1 19841114, 24 pp.
 DESIGNATED STATES: R: BE, DE, FR, GB, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1984-104741 19840427. PRIORITY: US 1983-489881 19830429.

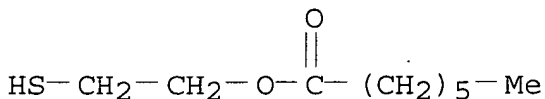
AB Halogen-free heat stabilizer compns. for halogenated resins comprise (A) an aliph. mercaptan and (B) .gtoreq.1 S-contg. organotin compd., whereby .ltoreq.80% of the mercaptan can be replaced by an alkali or alk. earth metal salt of a mercaptan or mercapto acid and the A-B wt. ratio is (1-25):(1-20). Thus, PVC [9002-86-2] 100, paraffin wax 1.2, oxidized polyethylene wax 0.15, Ca stearate 0.6, CaCO3 2.0, TiO2 1.0, and 15:85 methyltin sesquisulfide + 2-mercaptoethyl stearate [27564-01-8] stabilizer 0.5 parts were mixed in a blender, masticated at 370.degree.F and rated visually for discoloration. A resin compn. contg. a binary stabilizer remained white after 15 min of processing, whereas a compn. contg. only 1 of the stabilizers was discolored after 3-12 min..

IT 22909-87-1 27564-01-8 29946-28-9
 30982-97-9 69128-10-5 95115-35-8
 95115-37-0 95115-38-1

(heat stabilizers, for halogenated resins)

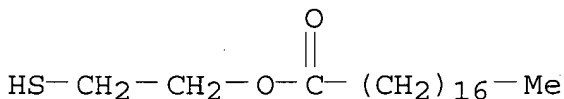
RN 22909-87-1 ZCAPLUS

CN Heptanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



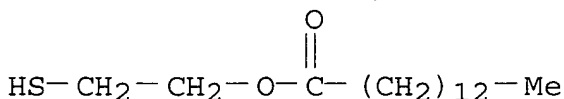
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



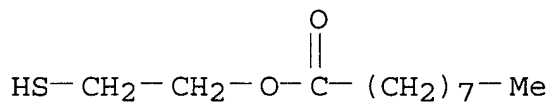
RN 29946-28-9 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



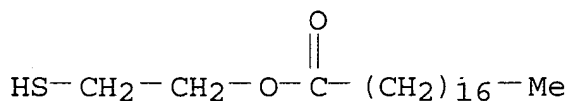
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 69128-10-5 ZCAPLUS

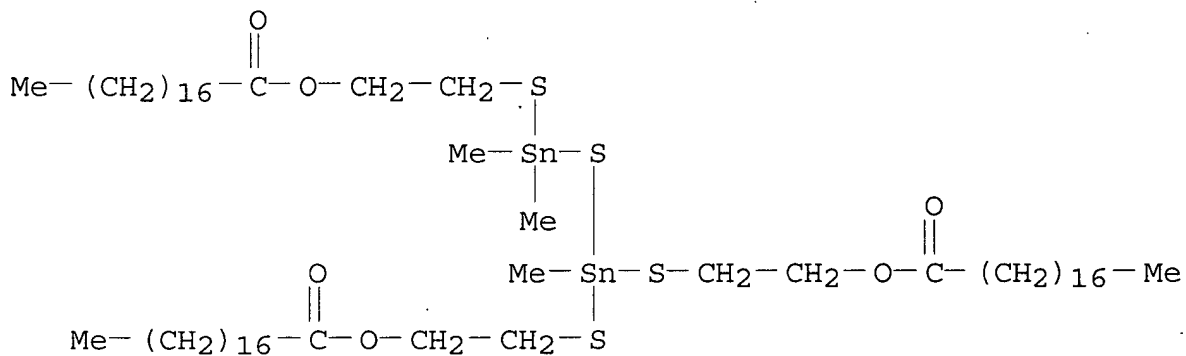
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

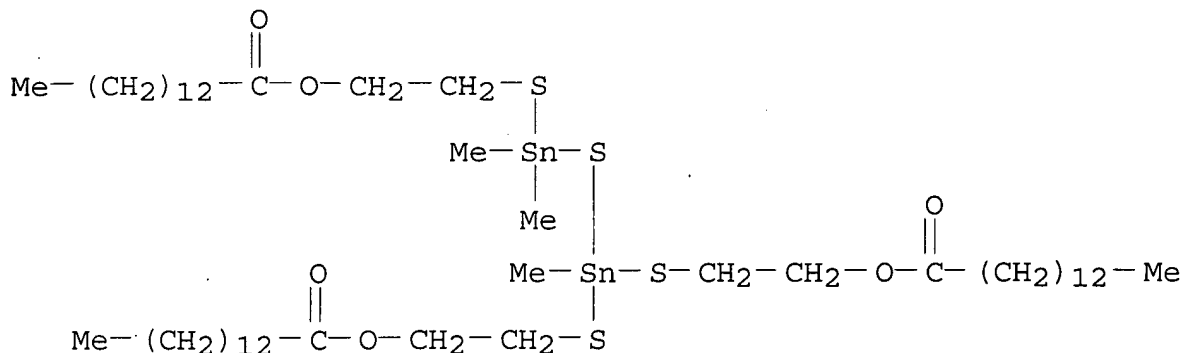
RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



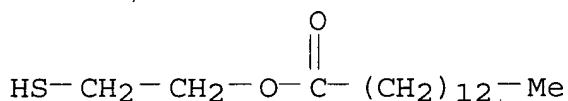
RN 95115-37-0 ZCAPLUS

CN Tetradecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 95115-38-1 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 22909-87-1 27564-01-8 29946-28-9
 30982-97-9 69128-10-5 95115-35-8
 95115-37-0 95115-38-1
 (heat stabilizers, for halogenated resins)

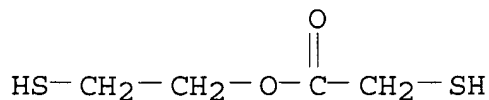
L36 ANSWER 3 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:199211 Document No. 98:199211 Stabilizer compositions for
 polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958
 A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
 JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US
 1982-345828 19820204.

AB Hydroxythiotin compds., SH-contg. org. compds., and optionally
 organotin compds. are used as heat stabilizers for halogen-contg.
 polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100,
 Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6,
 AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CCl₇H₃₃)₂ [85758-68-5] 0.02,
 HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and MeSn(:S)SCH₂CH₂O₂CCl₇H₃₃
 [83890-15-7] 0.40 part was rolled at .apprx.193.degree., and the
 color changed from white to tan-orange after 8.5 min.

IT 38705-47-4 59118-78-4 83890-16-8
 85758-52-7 85758-62-9 85758-64-1
 85758-65-2 85758-67-4
 (heat stabilizers contg., for PVC)

RN 38705-47-4 ZCAPLUS

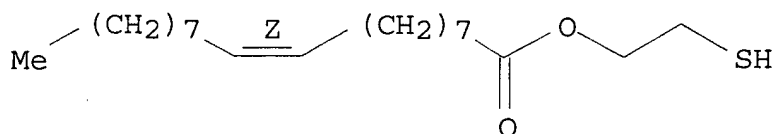
CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

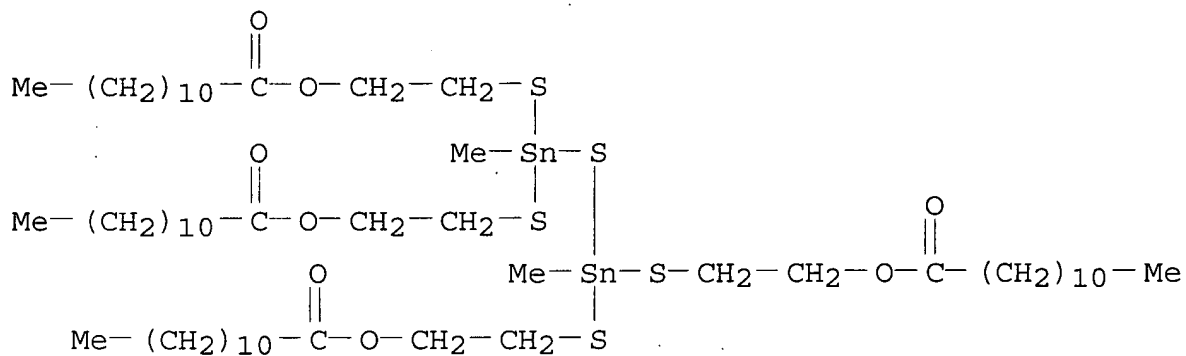
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



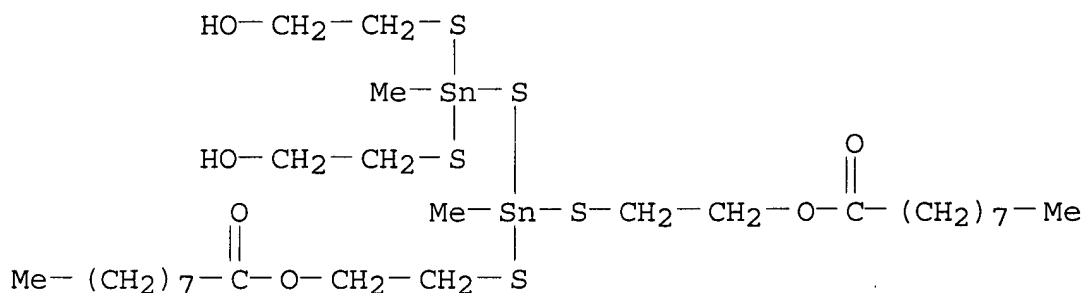
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85758-52-7 ZCAPLUS

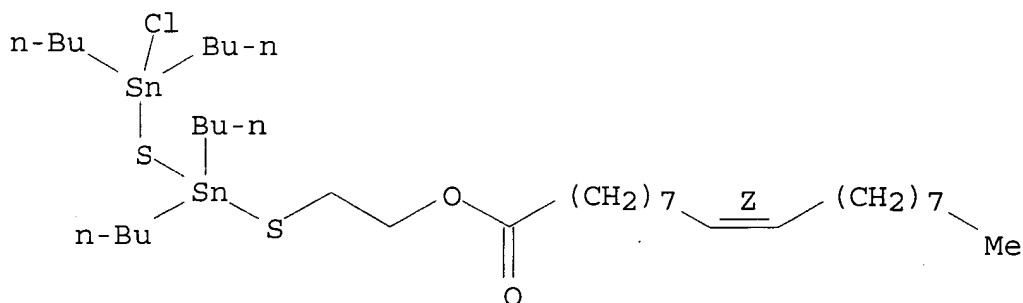
CN Nonanoic acid, [3,3-bis[(2-hydroxyethyl)thio]-1,3-dimethyldistannathianediylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85758-62-9 ZCAPLUS

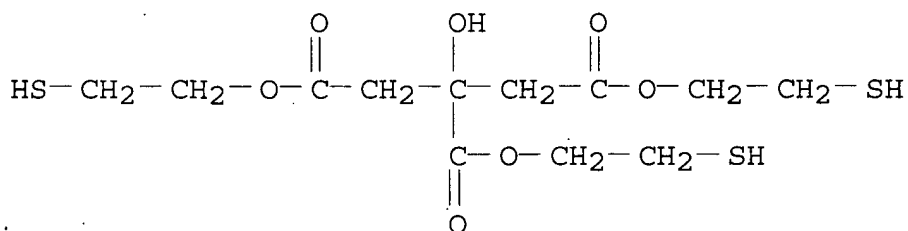
CN 9-Octadecenoic acid (9Z)-, 2-[(1,1,3,3-tetrabutyl-3-chlorodistannathianyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 85758-64-1 ZCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



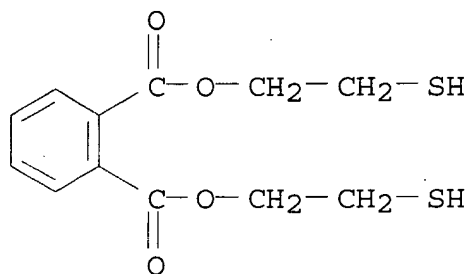
RN 85758-65-2 ZCAPLUS

CN 2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 85758-67-4 ZCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 38705-47-4 59118-78-4 83890-16-8
 85758-52-7 85758-62-9 85758-64-1
 85758-65-2 85758-67-4
 (heat stabilizers contg., for PVC)

L36 ANSWER 4 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5118 Document No. 98:5118 Polymer stabilizing compositions.
 Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.
 PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

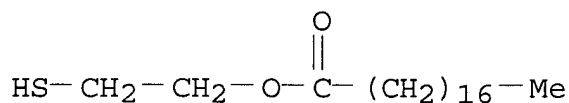
AB Effective heat stabilizers for polymers comprise .gtoreq.1 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were dry blended at 110.degree.. The mixt. was then roll milled at 193.degree., the color turning from white to tan-orange in 5-6 min.

IT 27564-01-8 59118-78-4 83890-16-8
 83890-17-9

(heat stabilizer compns. contg., for PVC)

RN 27564-01-8 ZCAPLUS

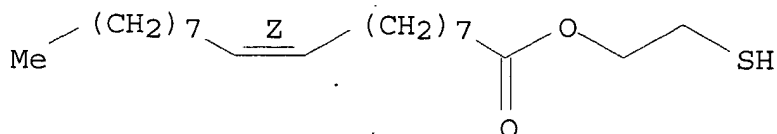
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

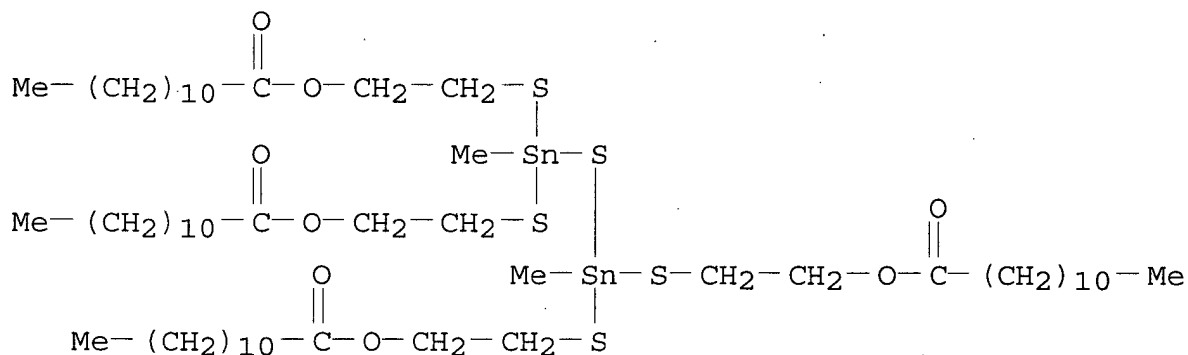
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



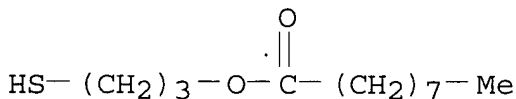
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)

IT 27564-01-8 59118-78-4 83890-16-8
83890-17-9

(heat stabilizer compns. contg., for PVC)

L36 ANSWER 5 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5117 Document No. 98:5117 Polymer stabilizing compositions and their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R.

(Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp.
DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.

(English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225.

PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin
compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane
0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0,
TiO₂ 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene
0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl
3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride
[993-16-8] 0.01 part were dry blended at 110.degree.. The compn.
was then roll milled at 193.degree., requiring 6 min for a color
change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8

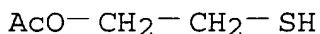
59118-78-4 83890-16-8 83890-17-9

83899-94-9

(heat stabilizer compns. contg., for PVC)

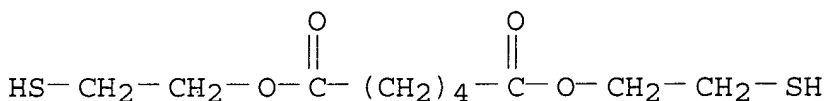
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



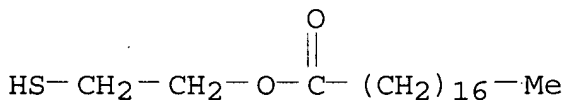
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 27564-01-8 ZCAPLUS

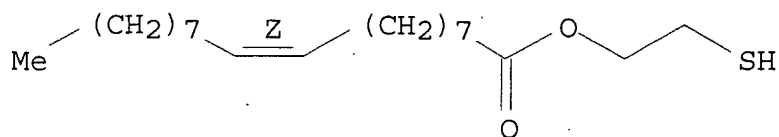
CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

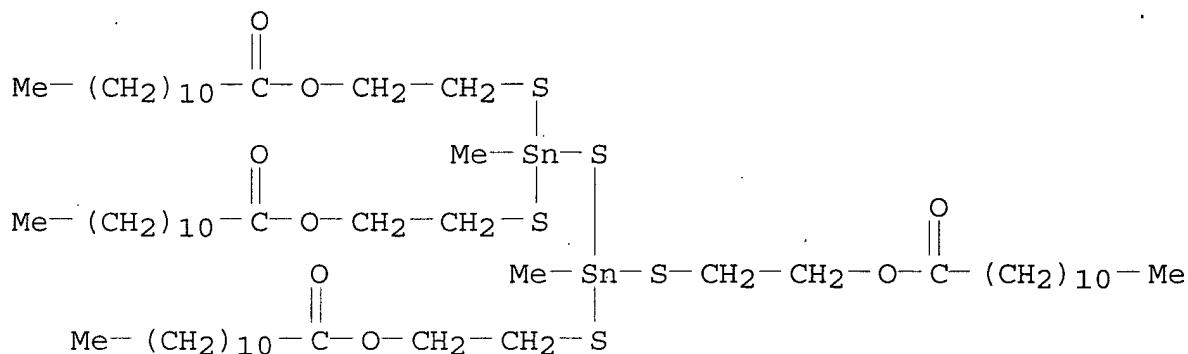
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



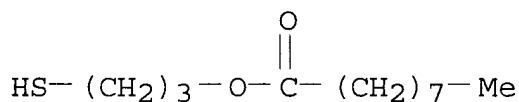
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



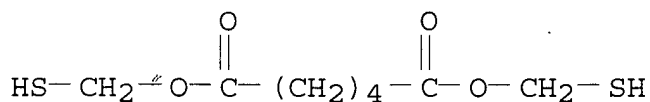
RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



RN 83899-94-9 ZCAPLUS

CN Hexanedioic acid, bis(mercaptomethyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 10194-00-0 27564-01-8

59118-78-4 83890-16-8 83890-17-9

83899-94-9

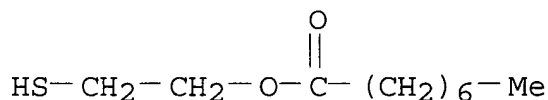
(heat stabilizer compns. contg., for PVC)

L36 ANSWER 6 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1979:104943 Document No. 90:104943 Stabilizers for polymer compositions. Kugele, Thomas Gordon (Cincinnati Milacron Chemicals, Inc., USA). Belg. BE 864976 19780717, 29 pp. (French). CODEN:

BEXXAL. APPLICATION: BE 1978-186002 19780316.

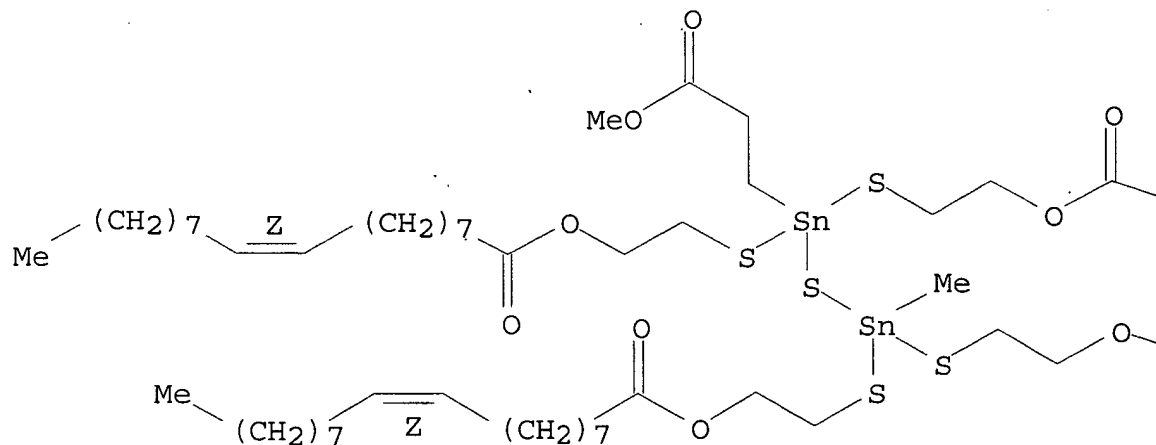
- AB Organotin sulfides or polysulfides prepd. from 2-mercaptoethyl caprylate (I), Na₂S, and acetylacetonyltin trichloride [69138-80-3], from I, Na₂S, bis(3-oxobutyl)tin dichloride, and 3-oxobutyltin trichloride (II), from 2-mercaptoethyl oleate (III) [59118-78-4], Na₂S₂, and 4-oxopentyltin trichloride [69242-48-4], from isooctyl thioglycolate [25103-09-7], Na₂S, and II, or from similar compds. are useful as heat stabilizers for polymers such as PVC [9002-86-2]. Thus, III, NaS, and MeO₂CCH₂CH₂SnCl₃ [59586-13-9] were used to prep. [(ROCH₂CH₂S)₂(MeO₂CCH₂CH₂)Sn]₂S (R = oleoyl) [69242-50-8] which was used as a heat stabilizer in PVC.
- IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide (heat stabilizers, for PVC)
- RN 57813-59-9 ZCAPLUS
- CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



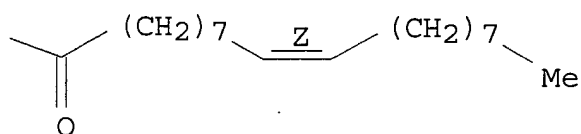
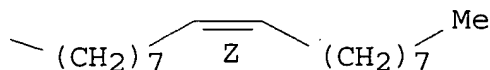
- IT 69242-47-3P (manuf. of, as heat stabilizers for PVC)
- RN 69242-47-3 ZCAPLUS
- CN 9-Octadecenoic acid (9Z)-, [1-(3-methoxy-3-oxopropyl)-3-methyl-1,3-distannathianediylidene]tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



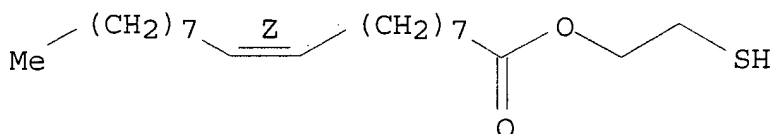
IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide

(heat stabilizers, for PVC)

IT 69242-47-3P

(manuf. of, as heat stabilizers for PVC)

IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

L36 ANSWER 7 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:181132 Document No. 84:181132 Organotin compounds and their use as stabilizers. Kugele, Thomas G. (Cincinnati Milacron, Inc., USA). Ger. Offen. DE 2531308 19760205, 81 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2531308 19750712.

AB Esters of alkyl[(hydroxyalkyl)thio]tin compds. contg. 1-2 C1-20 hydrocarbonyl groups or their sulfides are heat stabilizers for PVC [9002-86-2] with improved storage stability. Thus, adding 40 g 50% NaOH dropwise to 110 g Me2SnCl2 [753-73-1] and 109 g C8H17CO2CH2CH2SH [30982-97-9] stirred in 200 ml H2O at

30-40.degree., stirring 1 hr, adding 32.5 g 60% Na₂S [1313-82-2] dropwise at 25-35.degree., and stirring 1 hr at 35.degree. gives 95.5% (C₈H₁₇CO₂CH₂CH₂SSnMe₂)₂S (I) [59119-13-0].

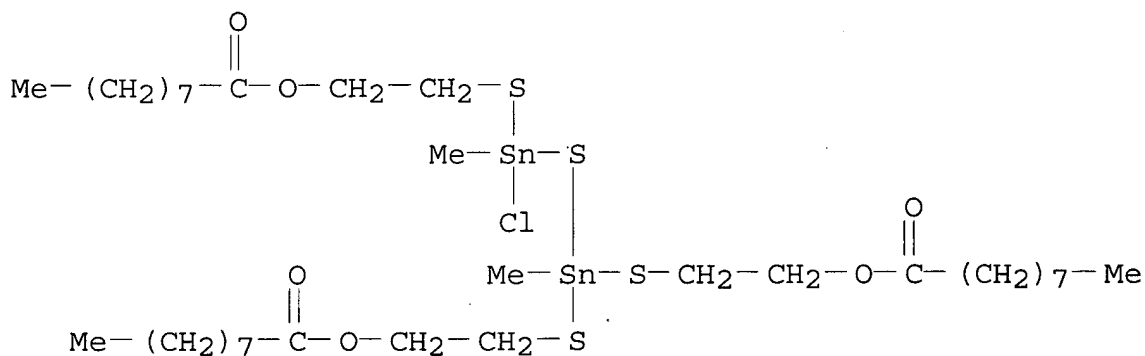
Compounded PVC (Geon 103EP) contg. I equiv. to 150 mg Sn/100 g has color (10 = colorless, 5 = orange-brown, 0 = blackened) >9, >7, 6, 5, 4, 3, and 2 after being calendered 1, 4, 6, 7, 8, 9, and 10 min, resp., at 193.degree..

IT 59118-89-7 59118-90-0 59118-91-1
 59118-95-5 59118-97-7 59118-98-8
 59118-99-9 59119-00-5 59119-01-6
 59119-03-8 59119-04-9 59119-05-0
 59119-07-2 59119-13-0 59126-14-6
 59126-15-7 59126-17-9 59138-46-4
 59158-79-1 59213-33-1

(heat stabilizers, for PVC)

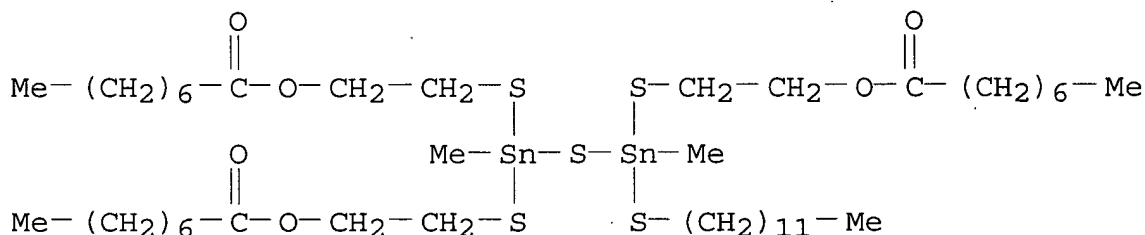
RN 59118-89-7 ZCAPLUS

CN Nonanoic acid, (1-chloro-1,3-dimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



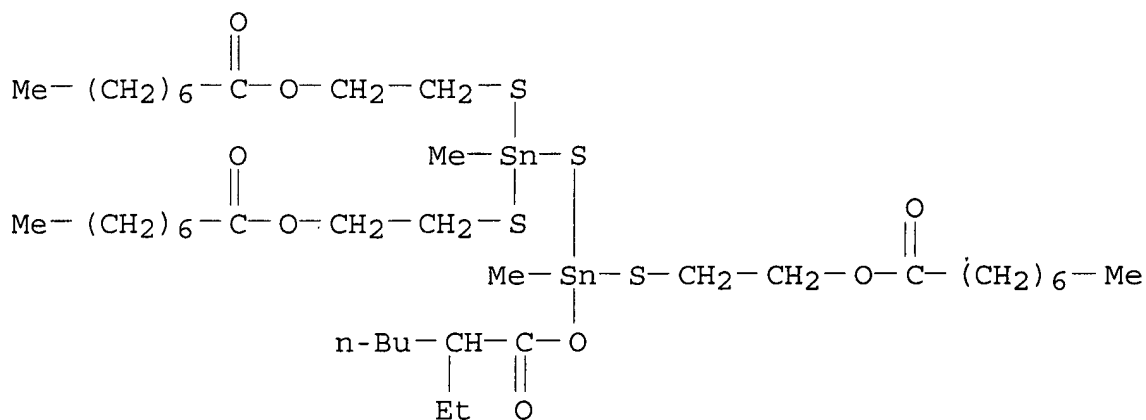
RN 59118-90-0 ZCAPLUS

CN Octanoic acid, [1-(dodecylthio)-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



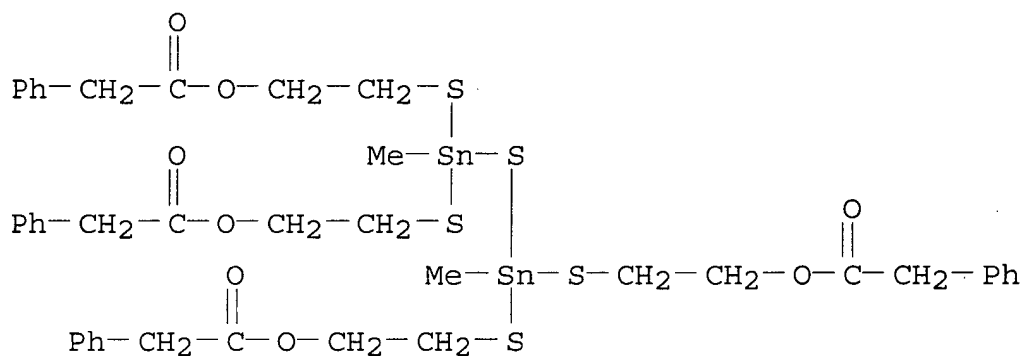
RN 59118-91-1 ZCAPLUS

CN Octanoic acid, [1-[(2-ethyl-1-oxohexyl)oxy]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



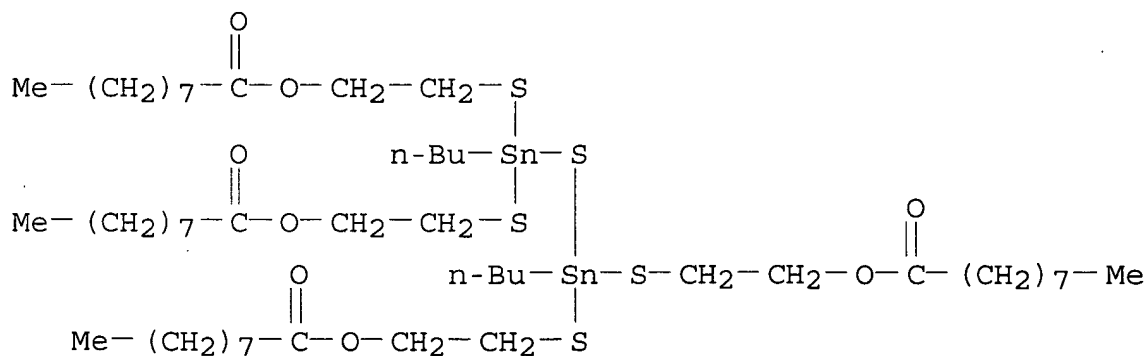
RN 59118-95-5 ZCAPLUS

CN Benzeneacetic acid, (1,3-dimethyl-1,3-distannathianediylidene) tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

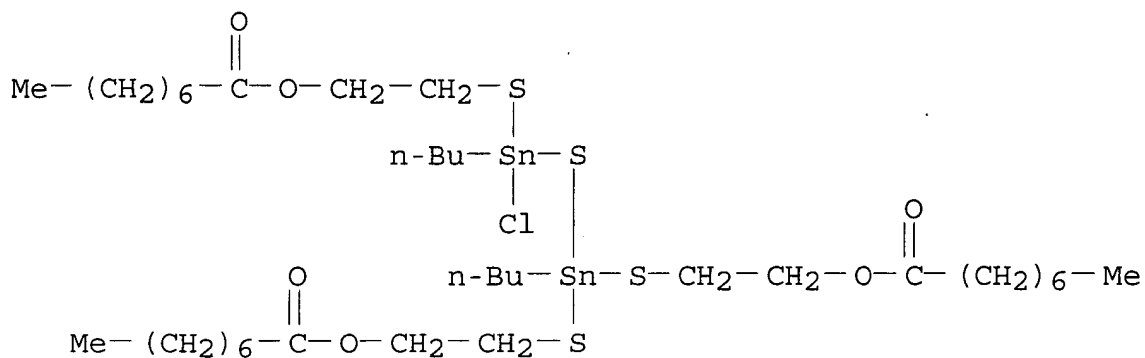


RN 59118-97-7 ZCAPLUS

CN Nonanoic acid, (1,3-dibutyl-1,3-distannathianediylidene) tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



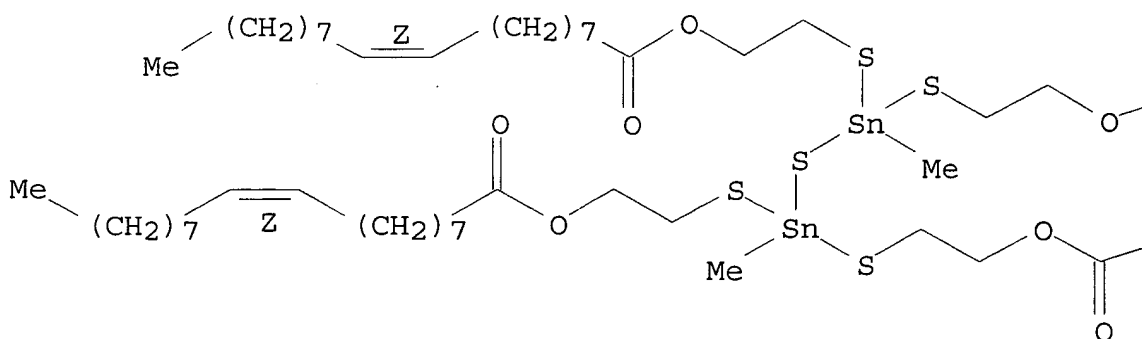
CN	Octanoic acid, (1,3-dibutyl-1-chloro-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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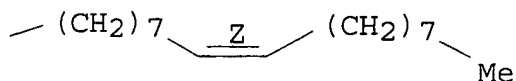
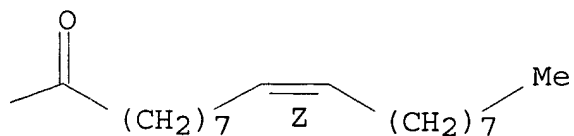
CN 9-Octadecenoic acid (9Z)-, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

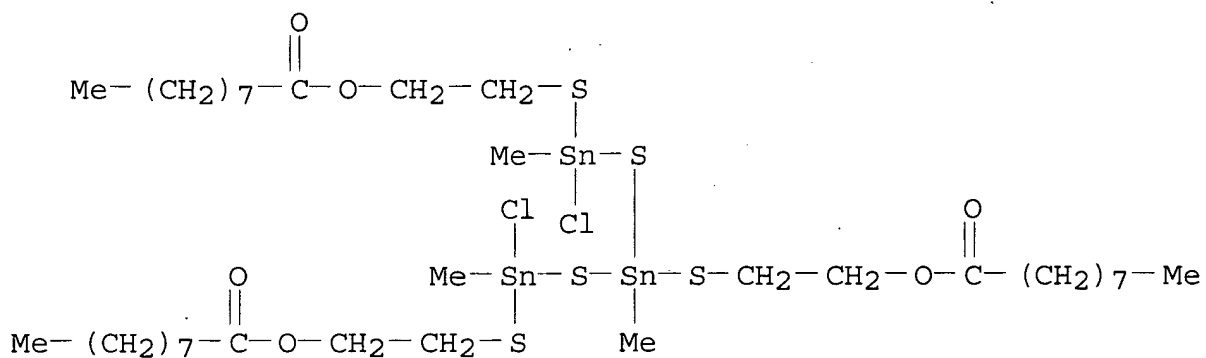


PAGE 1-B



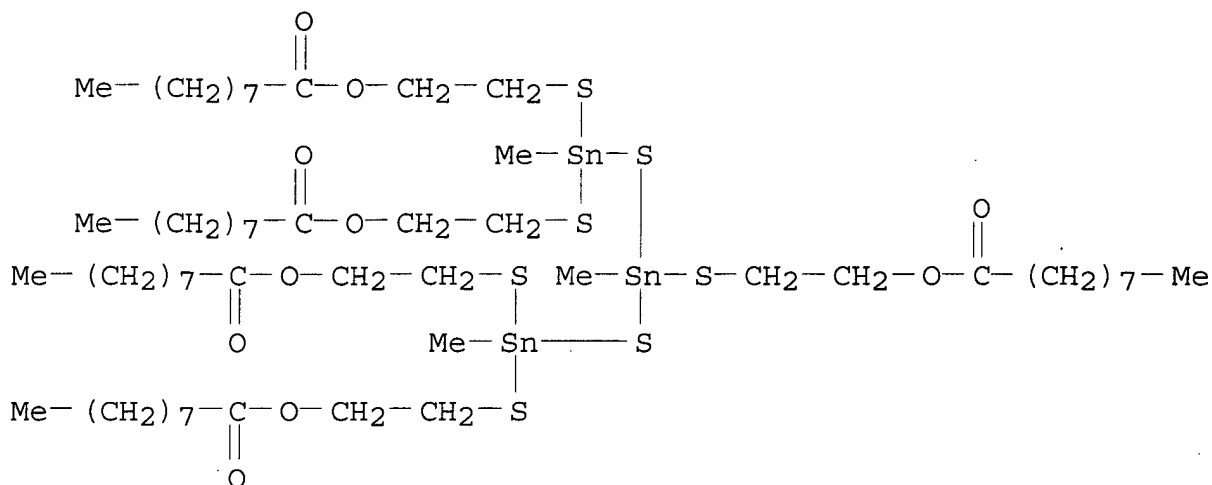
RN 59119-00-5 ZCAPLUS

CN Nonanoic acid, (1,5-dichloro-1,3,5-trimethyl-1,3,5-tristannathianetriyl) tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



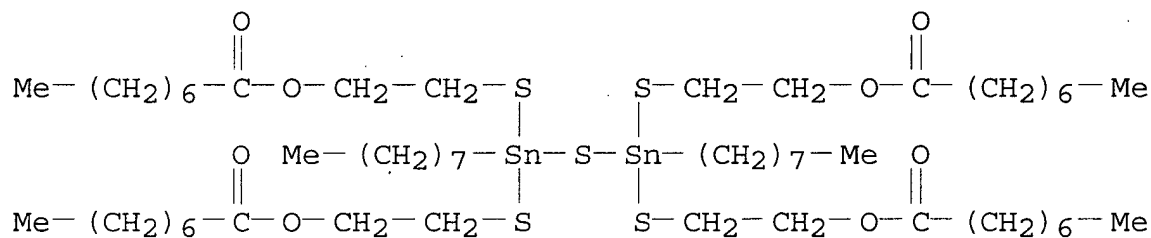
RN 59119-01-6 ZCAPLUS

CN Nonanoic acid, (1,3,5-trimethyl-3-tristannathianyl-1,5-diylidene)pentakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59119-03-8 ZCAPLUS

CN Octanoic acid, (1,3-dioctyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

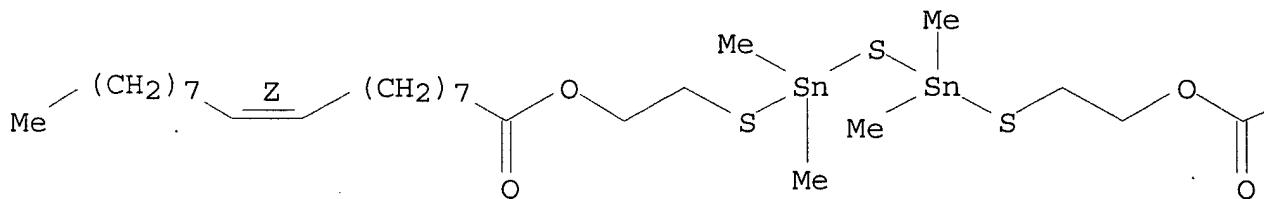


RN 59119-04-9 ZCAPLUS

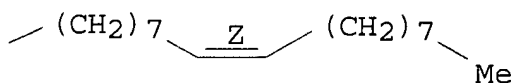
CN 9-Octadecenoic acid (9Z)-, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

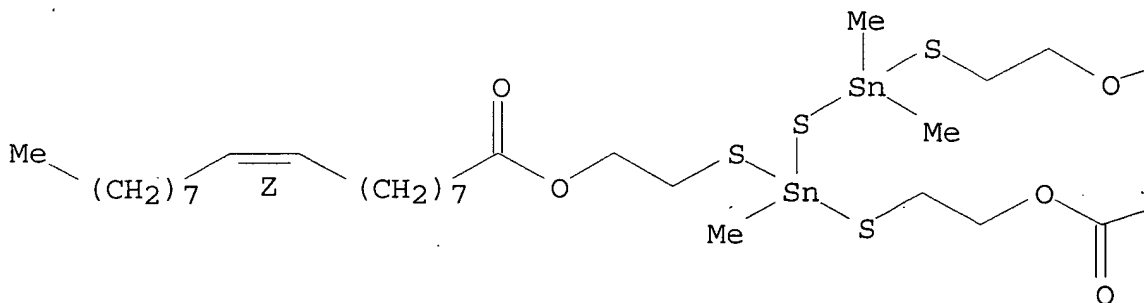


RN 59119-05-0 ZCAPLUS

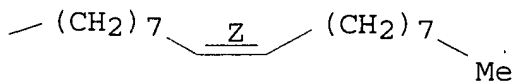
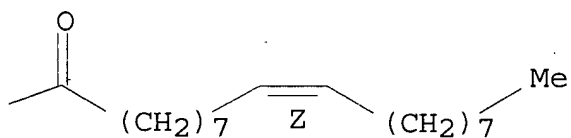
CN 9-Octadecenoic acid (9Z)-, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

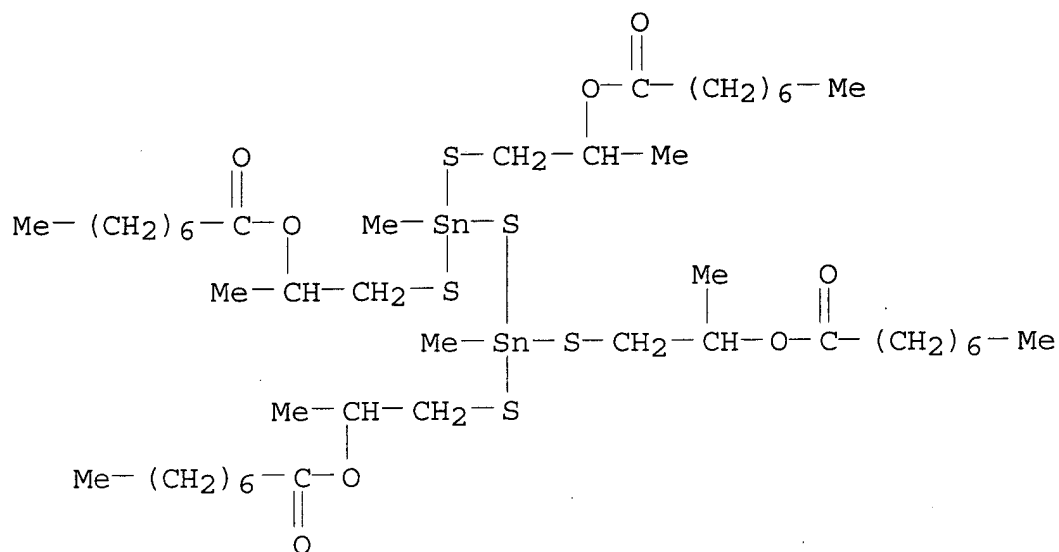


PAGE 1-B



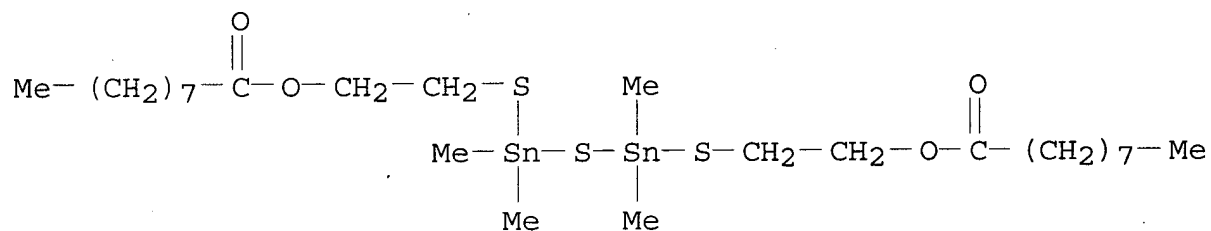
RN 59119-07-2 ZCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis[thio(1-methyl-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)



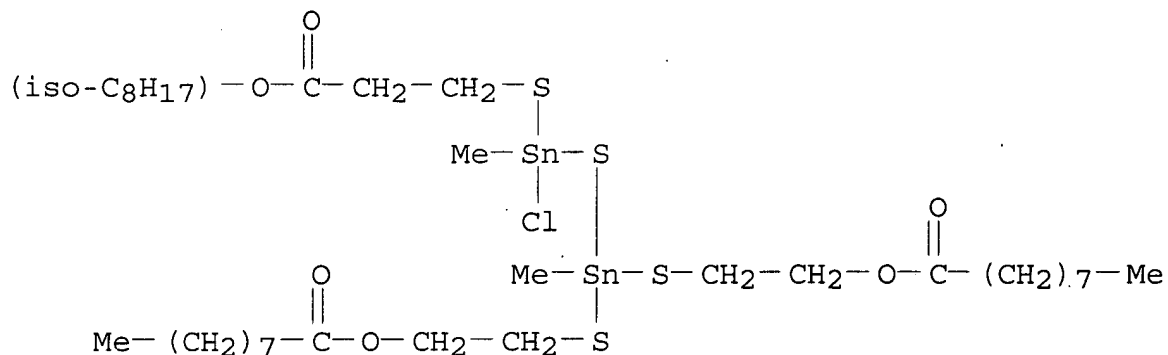
RN 59119-13-0 ZCAPLUS

CN Nonanoic acid, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



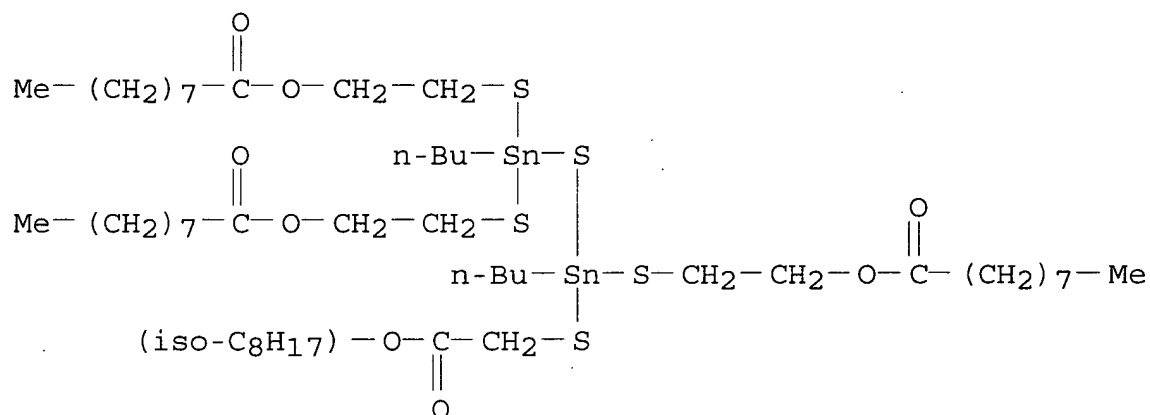
RN 59126-14-6 ZCAPLUS

CN Nonanoic acid, [3-chloro-3-[[3-(isooctyloxy)-3-oxopropyl]thio]-1,3-dimethyldistannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



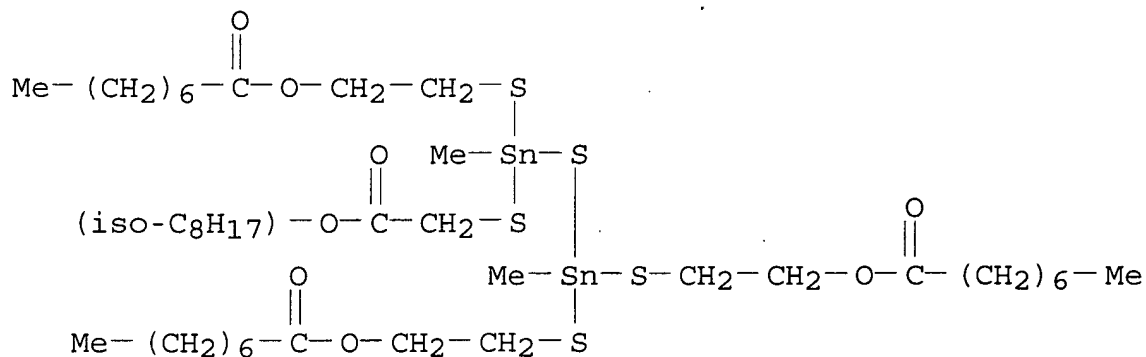
RN 59126-15-7 ZCAPLUS

CN Nonanoic acid, [1,3-dibutyl-1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



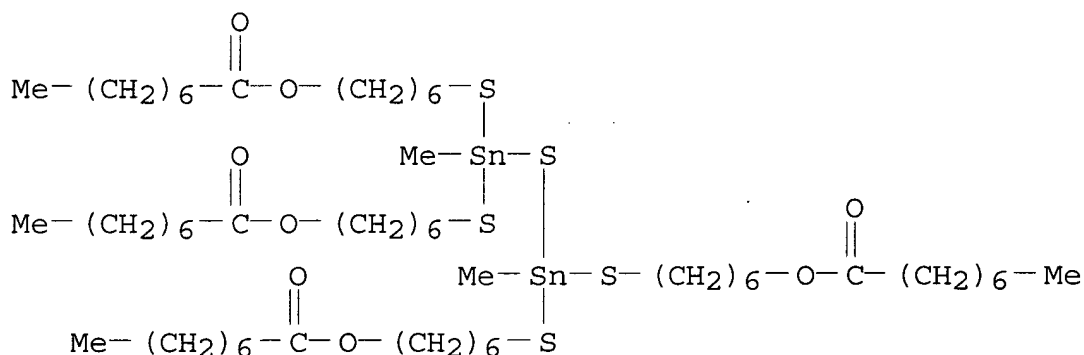
RN 59126-17-9 ZCAPLUS

CN Octanoic acid, [1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



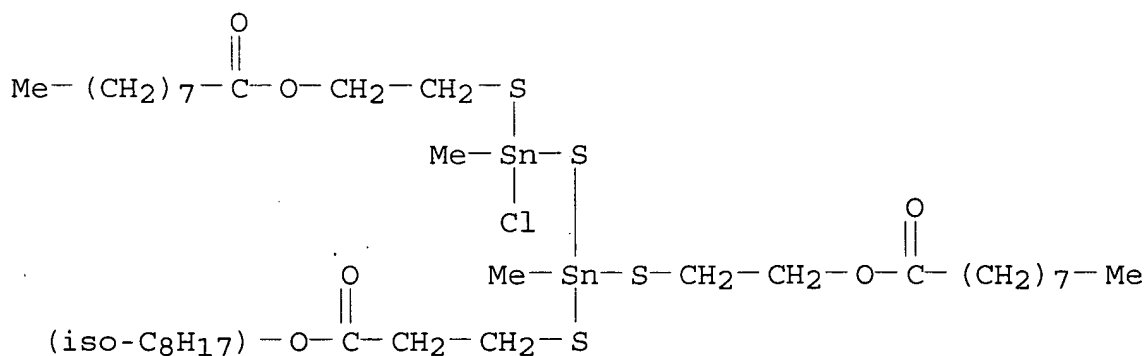
RN 59138-46-4 ZCAPLUS

CN Octanoic acid, [(1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio)]tetra-6,1-hexanediyl ester (9CI) (CA INDEX NAME)



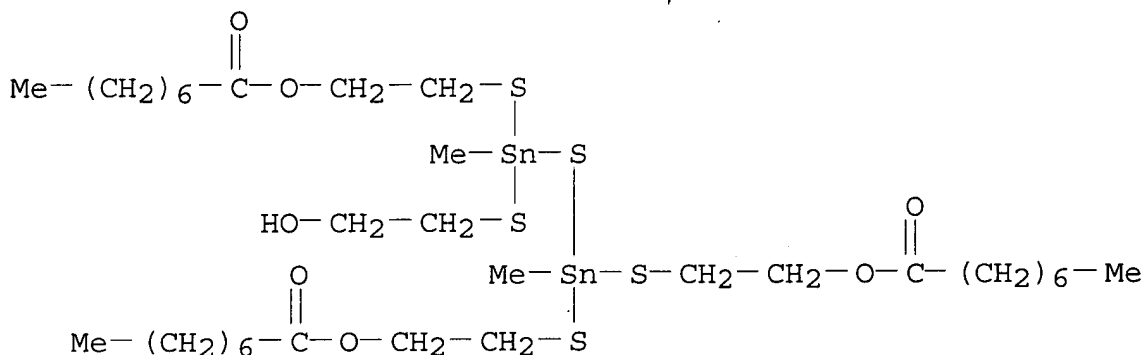
RN 59158-79-1 ZCAPLUS

CN 11-Oxa-4,6,8-trithia-7-stannaeicosanoic acid, 7-chloro-5,7-dimethyl-12-oxo-5-[[2-[(1-oxononyl)oxy]ethyl]thia]-, isooctyl ester (9CI) (CA INDEX NAME)



RN 59213-33-1 ZCAPLUS

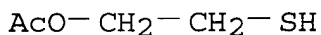
CN Octanoic acid, [1-[(2-hydroxyethyl)thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)

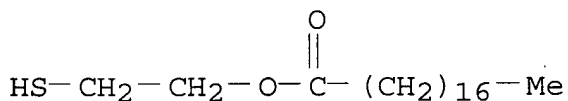
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



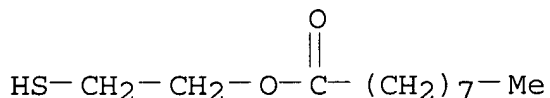
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



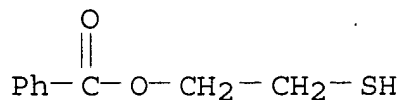
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



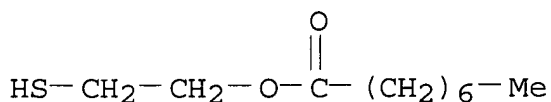
RN 50627-04-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-benzoate (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

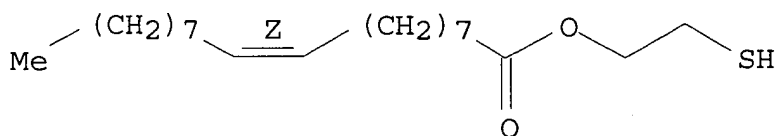
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

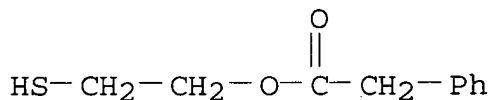
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



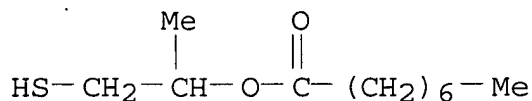
RN 59118-94-4 ZCAPLUS

CN Benzeneacetic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



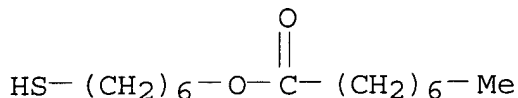
RN 59119-06-1 ZCAPLUS

CN Octanoic acid, 2-mercapto-1-methylethyl ester (9CI) (CA INDEX NAME)



RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



IT 59118-89-7 59118-90-0 59118-91-1
 59118-95-5 59118-97-7 59118-98-8
 59118-99-9 59119-00-5 59119-01-6
 59119-03-8 59119-04-9 59119-05-0
 59119-07-2 59119-13-0 59126-14-6
 59126-15-7 59126-17-9 59138-46-4
 59158-79-1 59213-33-1

(heat stabilizers, for PVC)

IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)

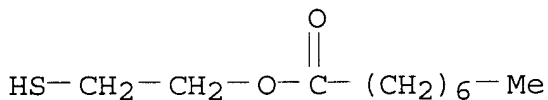
L36 ANSWER 8 OF 8 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1976:44363 Document No. 84:44363 Organotin mercaptides. Molt, Kenneth
 R. (Cincinnati Milacron Chemicals, Inc., USA). Ger. Offen. DE
 2503554 19750911, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE
 1975-2503554 19750129.

AB Approx. 20 methyltin thioethers, e.g., [(C₈H₁₇O₂CCH₂S)₂SnMe]₂S,
 MeSn(SCH₂CO₂C₈H₁₇)₃, [(C₇H₁₅CO₂CH₂CH₂S)₂SnMe]₂S,
 Me₂Sn(SCH₂Ph)SCH₂CO₂C₈H₁₇, etc. were prep'd. E.g., Me₂SnCl₂ and Na₂S
 gave Me₂SnS, which, with ClCH₂CH₂O₂CC₇H₁₅, gave
 Me₂SnClSCH₂CH₂O₂CC₇H₁₅. This treated with HSCH₂CH₂O₂CC₇H₁₅ gave
 Me₂Sn(SCH₂CH₂O₂CC₇H₁₅)₂. The methyltin thioethers were stabilizers
 for polyvinyl chloride.

IT 57813-59-9P 57813-61-3P
 (prepn. of)

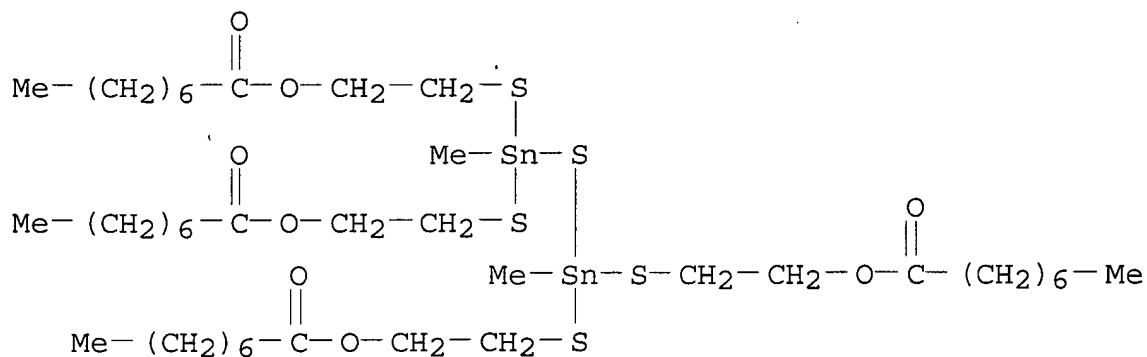
RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



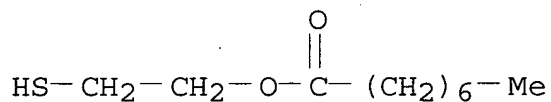
RN 57813-61-3 ZCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(th
 io-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



(reaction with tin chlorides)

CN	Octanoic acid, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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(prepn. of)

(reaction with tin chlorides)

=> d 144 1-5 cbib abs hitstr hitrn

L44 ANSWER 1 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1993:672627 Document No. 119:272627 Antioxidants containing tin and sulfur for polyolefin compositions. Smith, William L.; Foure, Michel; Ranceze, Dominique; Tozzolino, Pierre (ELF Atochem North America, Inc., USA). U.S. US 5229444 A 19930720, 8 pp. (English). CODEN: USXXAM. APPLICATION: US 1991-745579 19910815.

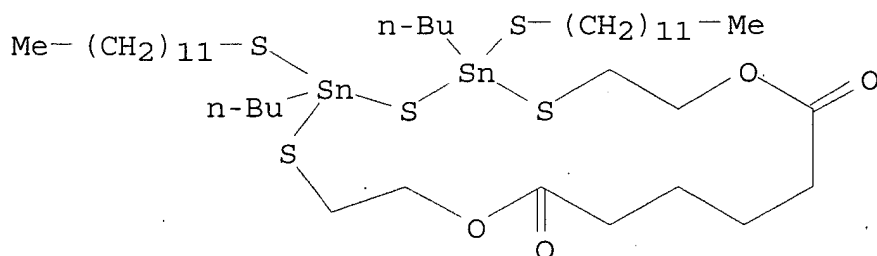
AB Antioxidants $\text{RSn}(:\text{S})\text{SR}_1$, $\text{RSn}(\text{X})(\text{SR}_1)\text{SSn}(\text{Y})(\text{SR}_1)\text{R}$, and $[\text{SnR}(\text{SR}_1)\text{S}]_p$ (R, R₁, X, Y = alkyl, Ph, cyclohexyl, ester-contg. group, hydroxyalkyl, aralkyl; p .gtoreq. 2) are useful in polyolefins for inhibiting thermal degrdn. in air. Polypropene contg. 2000 ppm $[\text{SnBu}(\text{SC}_{12}\text{H}_{25})\text{S}]_p$, prepd. from BuSnCl_3 , Na_2S , and $\text{HSC}_{12}\text{H}_{25}$, resisted degrdn. for .gtoreq.50 min at 200.degree. in the presence of O.

IT 76192-58-0

(antioxidants, for polyolefins)

RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione, 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



IT 76192-58-0

(antioxidants, for polyolefins)

L44 ANSWER 2 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

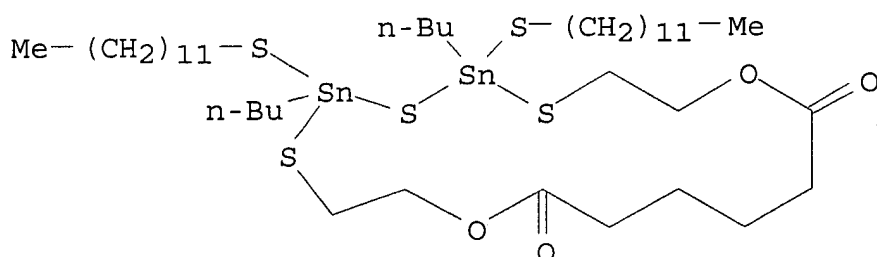
1991:584672 Document No. 115:184672 Tin sulfide compounds as antioxidants for polyolefin. Smith, William L.; Foure, Michel J.; Ranceze, Dominique; Tozzolino, Pierre (M and T Chemicals Inc., USA). Can. Pat. Appl. CA 2001633 AA 19910427, 22 pp. (English). CODEN: CPXXEB. APPLICATION: CA 1989-2001633 19891027.

AB The title antioxidants comprise $\text{R}_1\text{SSn}(:\text{S})\text{R}$, $\text{R}_1\text{SSnRXSSnRYSR}_1$ or $[\text{SnR}(\text{SR}_1)\text{S}]_p$ (R, R₁, X, Y = alkyl, Ph, cyclohexyl, carboxylate ester, hydroxyalkyl, aralkyl, optionally substituted or cyclic; p .gtoreq.2). NH_4OH (17.4 parts) was added dropwise with stirring to a mixt. of BuSnCl_3 148.5, $\text{n-C}_{12}\text{H}_{25}\text{SH}$ 60.7, PhMe 217, and H_2O 100 parts, the mixt. was heated to 70.degree. and stirred 0.5 h, cooled to <50.degree., mixed with Na_2S slowly, heated to 60-70.degree. and stirred 0.5 h, giving .apprx.111 g $[\text{SnBu}(\text{S-n-C}_{12}\text{H}_{25})\text{S}]_p$ (I). Polypropylene contg. 2000 ppm I had degrdn. induction time in 200.degree. O atm >50 min, vs. 12 using a hindered phenol.

IT 76192-58-0

(antioxidants, for polyolefins)

RN 76192-58-0 ZCAPLUS
 CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione,
 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



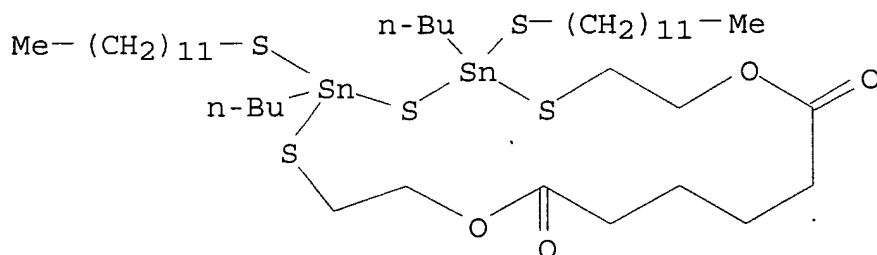
IT 76192-58-0
 (antioxidants, for polyolefins)

L44 ANSWER 3 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1991:515795 Document No. 115:115795 Antioxidant-polyolefin
 compositions. Smith, William L.; Ranceze, Dominique; Foure, Michel
 J.; Tozzolino, Pierre (Atochem North America, Inc., USA). Eur. Pat.
 Appl. EP 426912 A1 19910515, 17 pp. DESIGNATED STATES: R: AT, BE,
 CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (English). CODEN:
 EPXXDW. APPLICATION: EP 1989-311467 19891106.

AB The title compns. contain antioxidants $R_1SSn(R):S$, $[R_1SSn(R)(X)]_2S$,
 or $[Sn(R)(SR_1)S]_n$ (I; R, R_1 , X = alkyl, Ph, cyclohexyl, mono- or
 polycarboxylic acid ester, hydroxyalkyl, aralkyl; n.gto req. 2).
 Thus, a polypropylene sheet contg. 0.2% I (R = Bu, R_1 = lauryl) (II)
 prepd. from $BuSnCl_3$ and lauryl mercaptan in the presence of NH_4OH
 and hydrated Na sulfide had induction time (time necessary to
 observe degrdn. in O_2 atm. at 200.degree.) >50 min, vs. 12 for a
 sheet contg. 0.1% hindered phenol and 0.2% distearyl
 thiodipropionate instead of II.

IT 76192-58-0
 (antioxidants, for polyolefins)

RN 76192-58-0 ZCAPLUS
 CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione,
 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



IT 76192-58-0

(antioxidants, for polyolefins)

L44 ANSWER 4 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1990:632757 Document No. 113:232757 Metal compounds and phosphates as melt stabilizers for halogenated polymers. Silbermann, Joseph; Smith, William L. (M and T Chemicals Inc., USA). PCT Int. Appl. WO 9003999 A1 19900419, 48 pp. DESIGNATED STATES: W: AU, BR, DK, JP, KR; RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1989-US4461 19891006. PRIORITY: US 1988-256003 19881007.

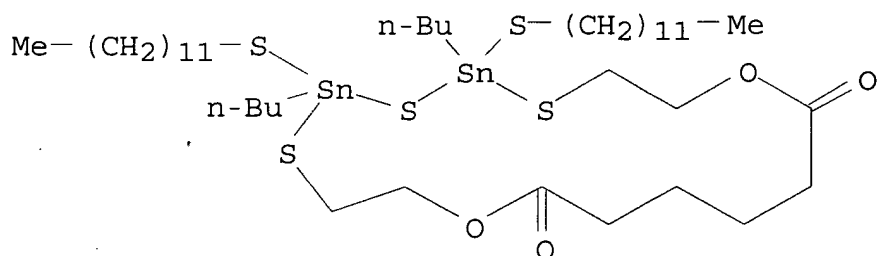
AB The title stabilizer mixts. have sp. surface >0.5 m²/g. Thus, a PVC compn. contg. 0.83 phr Na₂HPO₄ and 1.2 phr (C₈H₁₇)₂Sn(SCH₂CO₂C₈H₁₇)₂ was stable in Brabender mixing at 60-120 rpm for 10.3 min; vs. 7.2 with 1.05 phr organotin compd. mixt.

IT 76192-58-0

(heat stabilizers, for halogenated polymers)

RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione, 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



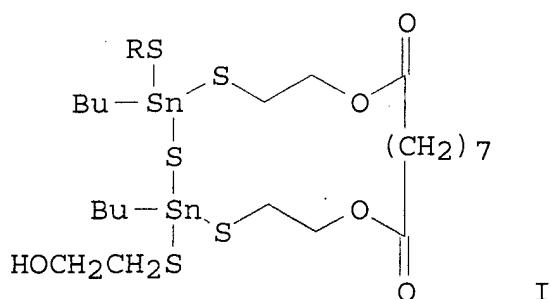
IT 76192-58-0

(heat stabilizers, for halogenated polymers)

L44 ANSWER 5 OF 5 ZCAPLUS COPYRIGHT 2003 ACS on STN

1981:47482 Document No. 94:47482 Organotin compounds and resins or polymers stabilized with them. Dworking, Robert Dally; Larkin, William Albert (M and T Chemicals Inc., USA). Eur. Pat. Appl. EP 11456 19800528, 101 pp. (English). CODEN: EPXXDW. APPLICATION: EP 1979-302520 19791109.

GI



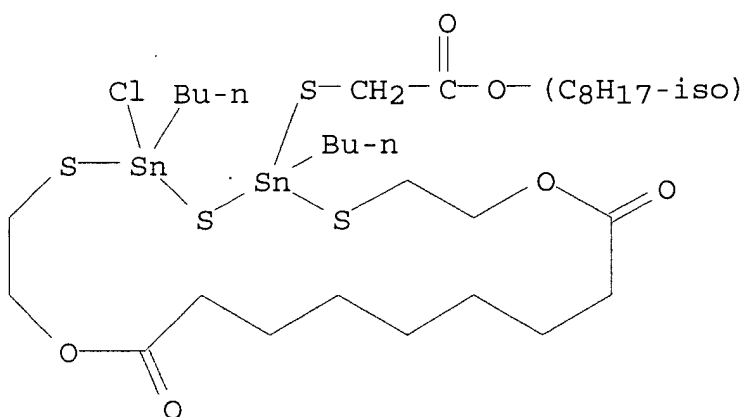
AB Approx. 20 organotin sulfide esters were prepd. by various procedures. Thus, 0.4 mol BuSnCl₃, 0.8 mol NH₄OH, 0.2 mol HSCH₂CH₂OH, 0.2 mol Me(CH₂)₁₁SH, 0.2 mol HSCH₂CH₂O₂C(CH₂)₇CO₂CH₂CH₂SH, and 233 mol H₂O, was heated to 70.degree. 0.5 h by 0.2 mol Na₂S addn., the mixt. heated at 75.degree. 0.5 h, and the pH adjusted to 7 with NH₄OH to give 88 g I (R = n-dodecyl). Also prepd. were [(BuSn(S)SCH₂CH₂O)]₄M (M = Si, Ti), [BuSn(S)SCH₂CH₂O)]₃M (M = B, P, Al), and I (R = CH₂CO₂(CH₂)₅CHMe₂). The compds. prepd. were useful as heat stabilizers for halogenated polymers such as PVC.

IT 76185-05-2

(activity as heat stabilizer for polymers)

RN 76185-05-2 ZCAPLUS

CN Acetic acid, [(5,7-dibutyl-7-chloro-12,20-dioxo-1,11-dioxa-4,6,8-trithia-5,7-distannacycloeicosan-5-yl)thio]-, isooctyl ester (9CI)
(CA INDEX NAME)

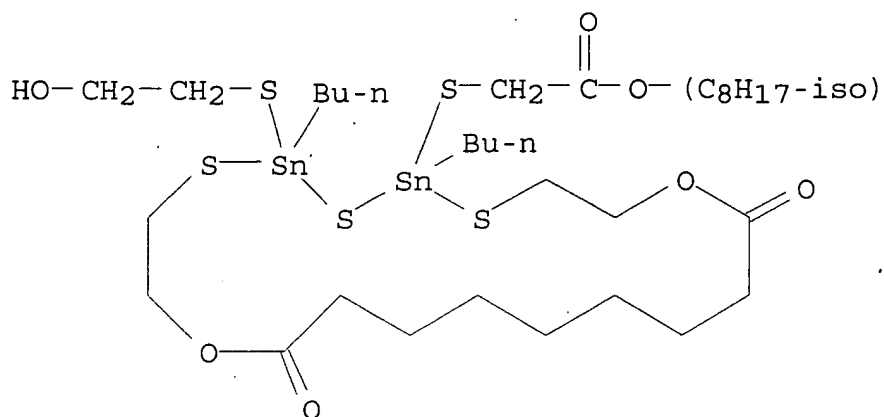


IT 76185-06-3P 76191-18-9P 76192-58-0P
76192-59-1P 76192-60-4P 76192-61-5P
76192-62-6P 76192-64-8P 76207-95-9P
76233-84-6P

(prepn. and activity as heat stabilizer for polymers)

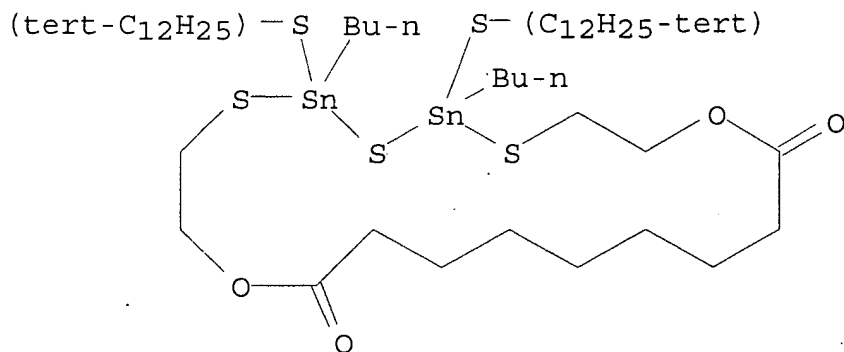
RN 76185-06-3 ZCAPLUS

CN Acetic acid, [[5,7-dibutyl-7-[(2-hydroxyethyl)thio]-12,20-dioxo-1,11-dioxa-4,6,8-trithia-5,7-distannacycloeicosan-5-yl]thio]-, isooctyl ester (9CI) (CA INDEX NAME)



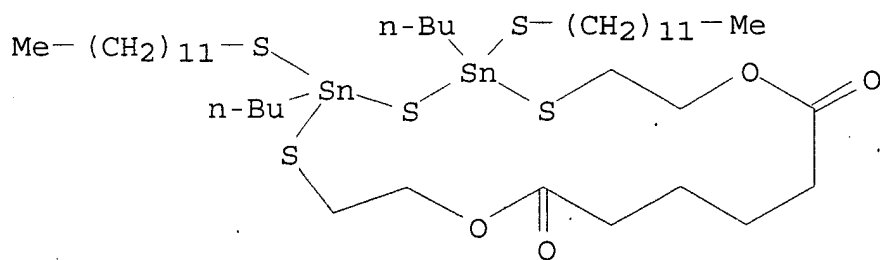
RN 76191-18-9 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione, 5,7-dibutyl-5,7-bis(tert-dodecylthio)- (9CI) (CA INDEX NAME)

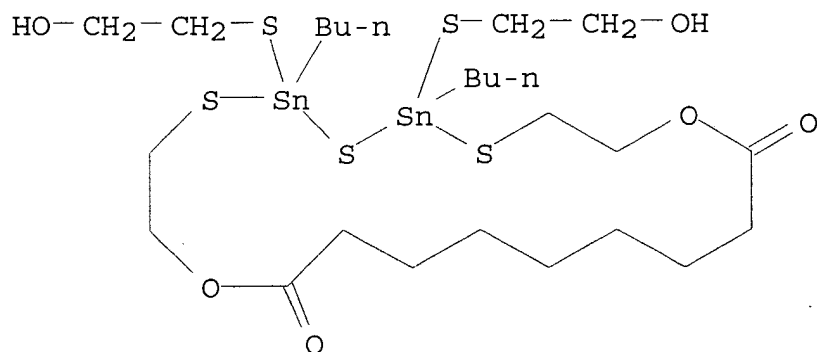


RN 76192-58-0 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloheptadecane-12,17-dione, 5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)



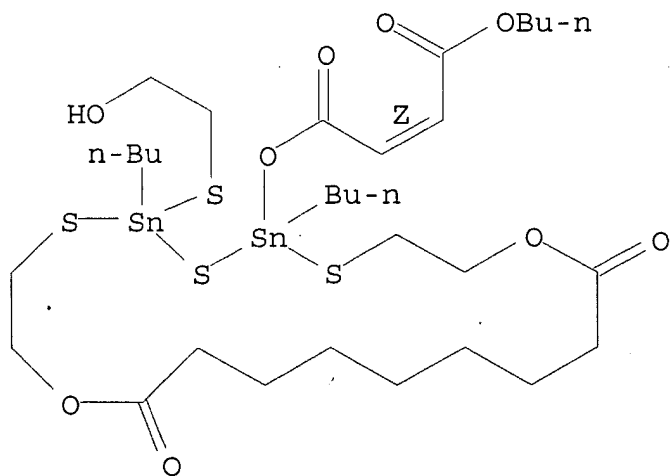
RN 76192-59-1 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5,7-bis[(2-hydroxyethyl)thio]- (9CI) (CA INDEX NAME)

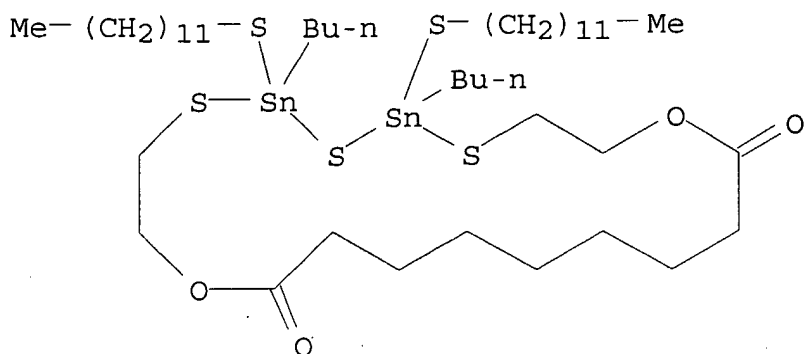
RN 76192-60-4 ZCAPLUS

CN 2-Butenedioic acid (2Z)-, butyl 5,7-dibutyl-7-[(2-hydroxyethyl)thio]-
12,20-dioxo-1,11-dioxa-4,6,8-trithia-5,7-distannacycloeicosan-5-yl
ester (9CI) (CA INDEX NAME)

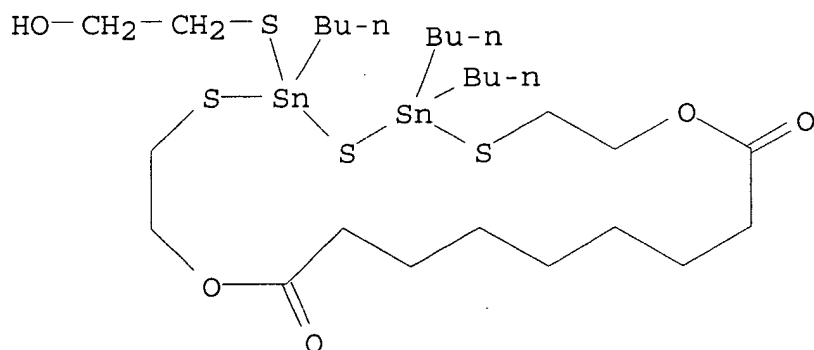
Double bond geometry as shown.



RN 76192-61-5 ZCAPLUS

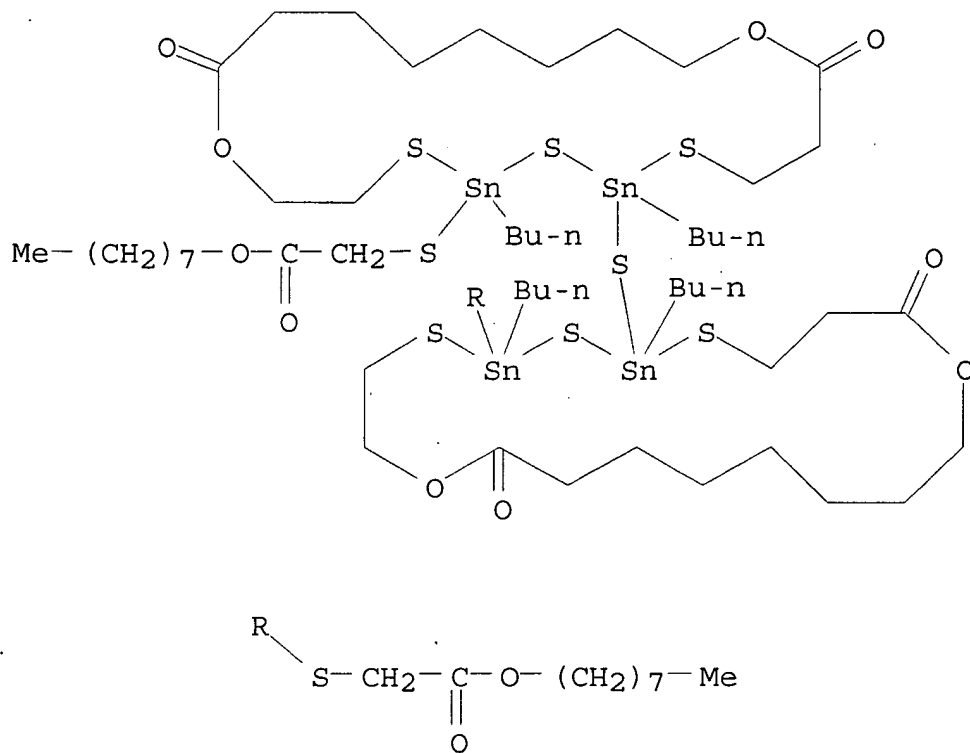
CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5,7-bis(dodecylthio)- (9CI) (CA INDEX NAME)

RN 76192-62-6 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,5,7-tributyl-7-[(2-hydroxyethyl)thio]- (9CI) (CA INDEX NAME)

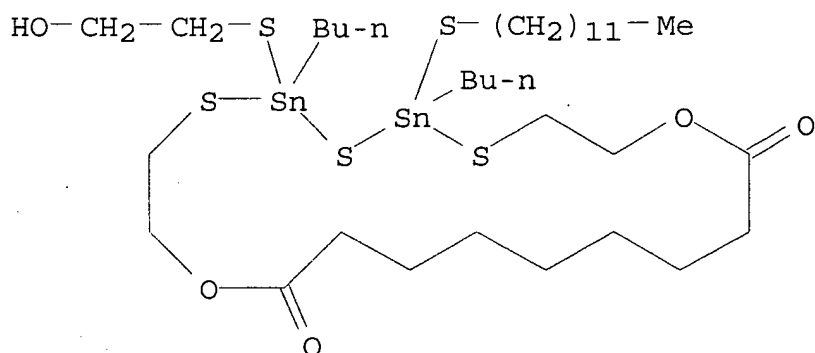
RN 76192-64-8 ZCAPLUS

CN Acetic acid, 2,2'-[thiobis[(5,7-dibutyl-11,20-dioxo-1,12-dioxa-4,6,8-
trithia-5,7-distannacycloeicosane-7,5-diyl)thio]]bis-, dioctyl ester
(9CI) (CA INDEX NAME)



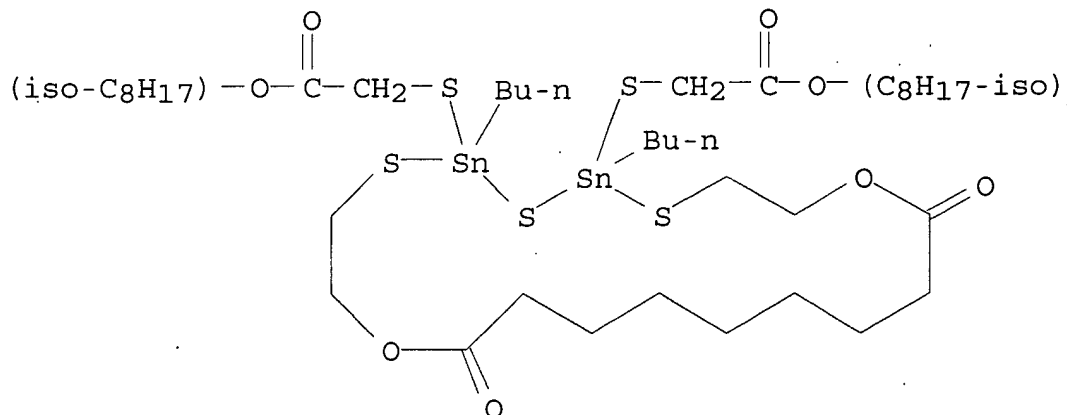
RN 76207-95-9 ZCAPLUS

CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5-(dodecylthio)-7-[(2-hydroxyethyl)thio]-(9CI) (CA
INDEX NAME)



RN 76233-84-6 ZCAPLUS

CN Acetic acid, 2,2'-[(5,7-dibutyl-12,20-dioxo-1,11-dioxa-4,6,8-trithia-
5,7-distannacycloeicosane-5,7-diyl)bis(thio)]bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

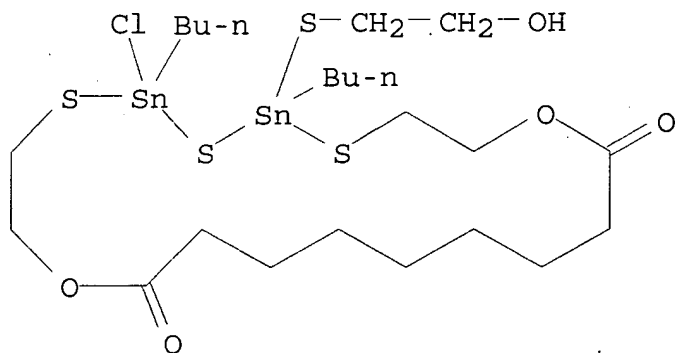


IT 76192-63-7P 76192-68-2P

(prepn. of)

RN 76192-63-7 ZCAPLUS

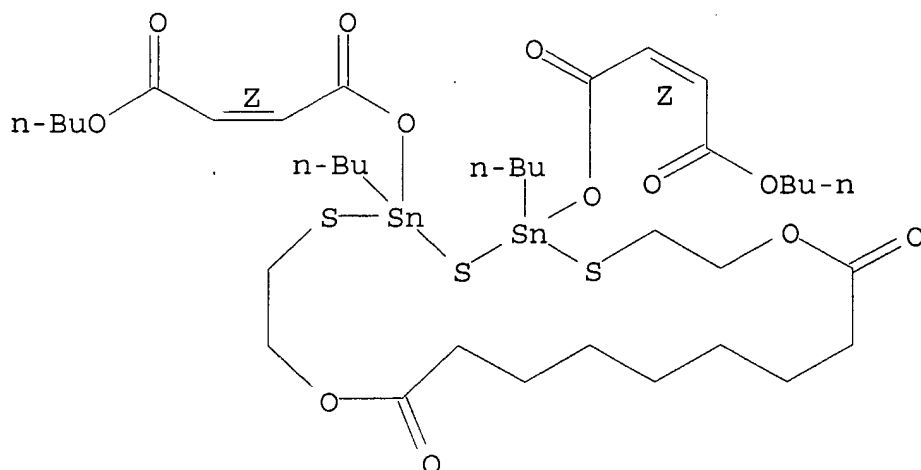
CN 1,11-Dioxa-4,6,8-trithia-5,7-distannacycloeicosane-12,20-dione,
5,7-dibutyl-5-chloro-7-[(2-hydroxyethyl)thio]- (9CI) (CA INDEX
NAME)



RN 76192-68-2 ZCAPLUS

CN 2-Butenedioic acid (2Z)-, 5,7-dibutyl-12,20-dioxo-1,11-dioxa-4,6,8-
trithia-5,7-distannacycloeicosane-5,7-diyl dibutyl ester (9CI) (CA
INDEX NAME)

Double bond geometry as shown.

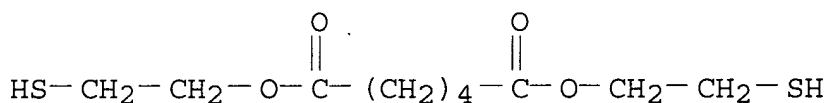


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

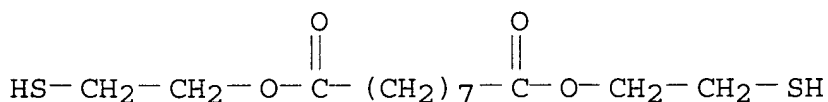
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 76185-05-2

(activity as heat stabilizer for polymers)

IT 76185-06-3P 76191-18-9P 76192-58-0P

76192-59-1P 76192-60-4P 76192-61-5P

76192-62-6P 76192-64-8P 76207-95-9P

76233-84-6P

(prepn. and activity as heat stabilizer for polymers)

IT 76192-63-7P 76192-68-2P

(prepn. of)

IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

=> d 148 1-33 cbib abs hitstr hitrn

L48 ANSWER 1 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

2000:367068 Document No. 133:5428 Stabilized clear halogenated polymer compositions and organotin-phenyl salicylate heat-, light-, and weathering-stabilizer compositions therefor. Conroy, Gary Martin; Norris, Gene Kelly (Rohm and Haas Company, USA). Eur. Pat. Appl. EP 1004625 A1 20000531, 19 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-309120 19991116. PRIORITY: US 1998-199974 19981125.

AB Stabilizer compns. for protecting clear PVC and other clear halogenated polymer compns. against discoloration and degrdn. by light and weathering in addn. to heat comprise an organotin compd. selected from the group consisting of organotin mercaptides, sulfides of organotin mercaptides, organotin sulfides, and/or organotin carboxylates, and a free Ph salicylate compd. Thus, moldings comprising PVC 100, impact modifier 6.0, process aid 1.5, ester wax lubricant 1.7, oxidized polyethylene lubricant 0.2, epoxidized soybean oil 1.0, Advastab TM 181 1.2, and Ph salicylate (I) 0.1 part was weathered 960 h at 50.degree. (alternating 4 h UV exposure and 4 h moisture condensation cycles), showing color change at 160, 320, 480, 640, 800, and 960 h 2.2, 4.7, 9.8, 9.9, 10.0, and 9.6, resp., compared with 2.7, 5.9, 10.7, 11.5, 12.3, and 13.6, resp., without I.

IT 271249-34-4, Advastab TM 181

(Advastab TM 181; synergistic organotin-Ph salicylate heat-, light-, and weathering-stabilizer compns. for clear halogenated polymer compns.)

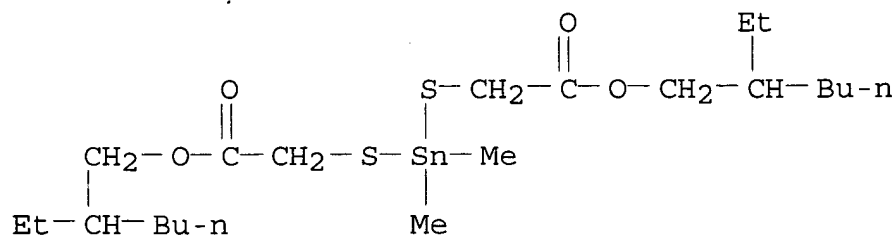
RN 271249-34-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 10-ethyl-4,4-dimethyl-7-oxo-, 2-ethylhexyl ester, mixt. with 2-ethylhexyl hydrogen 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-methyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (9CI) (CA INDEX NAME)

CM 1

CRN 57583-35-4

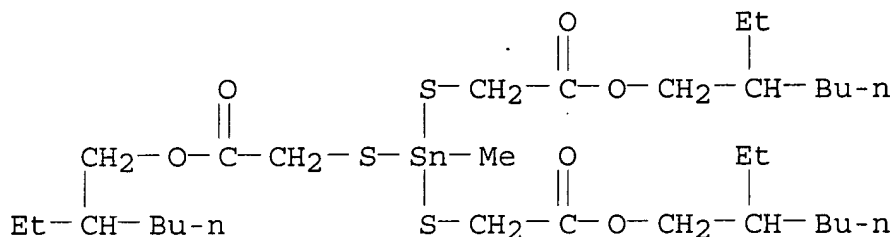
CMF C22 H44 O4 S2 Sn



CM 2

CRN 57583-34-3

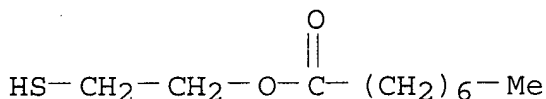
CMF C31 H60 O6 S3 Sn



IT 57813-59-9D, 2-Mercaptoethyl octanoate, reaction products with mercapto and tin compds. 68928-33-6D, 2-Mercaptoethyl decanoate, reaction products with mercapto and tin compds. (synergistic organotin-Ph salicylate heat-, light-, and weathering-stabilizer compns. for clear halogenated polymer compns.)

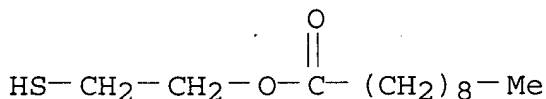
RN 57813-59-9 ZCAPLUS

CN	Octanoic acid, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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RN 68928-33-6 ZCAPLUS

CN	Decanoic acid, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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IT 271249-34-4, Advastab TM 181

(Advastab TM 181; synergistic organotin-Ph salicylate heat-, light-, and weathering-stabilizer compns. for clear halogenated polymer compns.)

IT 57813-59-9D, 2-Mercaptoethyl octanoate, reaction products with mercapto and tin compds. 68928-33-6D, 2-Mercaptoethyl decanoate, reaction products with mercapto and tin compds. (synergistic organotin-Ph salicylate heat-, light-, and weathering-stabilizer compns. for clear halogenated polymer compns.)

tert-butyl hydroperoxide with thioorganostannic derivatives.

Bevilacqua, M.; Pereyre, M.; Maillard, B. (Lab. de Chim. Organique et Organometallique, URA 35 CNRS, Univ. Bordeaux I, Talence, 33405, Fr.). *Thermochimica Acta*, 297(1-2), 151-160 (French) 1997. CODEN: THACAS. ISSN: 0040-6031. Publisher: Elsevier.

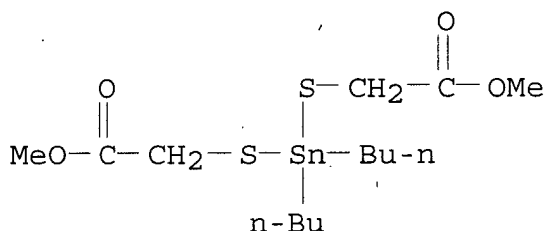
AB The decompn. of tBuOOH in di-Bu phthalate by 16 thioorganostannic derivs. (Bu₂Sn(SR)₂ (R = CH₂CO₂Me, Bu, CH₂CH₂CO₂CH₂Et(C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇); R₁Sn(S)SBu (R₁ = Bu, C₈H₁₇); BuSn(S)SR₂ (R₂ = CH₂CH₂CO₂CH₂Et(C₅H₁₁), CH₂CH₂O₂CMe, CH₂CO₂C₁₈H₃₇, C₁₂H₂₅); Bu₃SnSCH₂CO₂C₁₈H₃₇; BuSn(SCH₂CO₂C₁₈H₃₇)₃; Sn(SCH₂CO₂C₁₈H₃₇)₄; Bu₃SnSSnBu₃; (Bu₂SnS)₃), some of which are known stabilizers of polyolefins, was studied by temp. programmed DSC. The degrdn. involves various successive reactions and certain produced thioorganostannic compds. are capable of catalyzing the decompn. of tBuOOH.

IT 27574-38-5, Dibutylbis(methyl thioglycolato)stannane
32251-23-3, Dibutylbis(octadecyloxycarbonylmethylthio)stanna
ne 57414-19-4, Butyltris(octadecyloxycarbonylmethylthio)st
annane 182221-37-0, Butyl(dodecylthio)(thio)stannane
182221-39-2, Butyl(octadecyloxycarbonylmethylthio)tin
sulfide

(DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

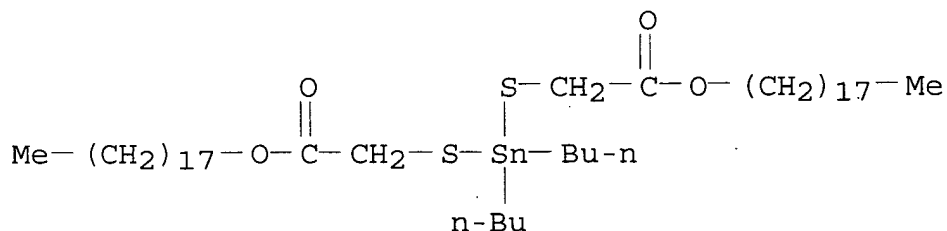
RN 27574-38-5 ZCAPLUS

CN 2-Oxa-5,7-dithia-6-stannanonan-9-oic acid, 6,6-dibutyl-3-oxo-,
methyl ester (9CI) (CA INDEX NAME)



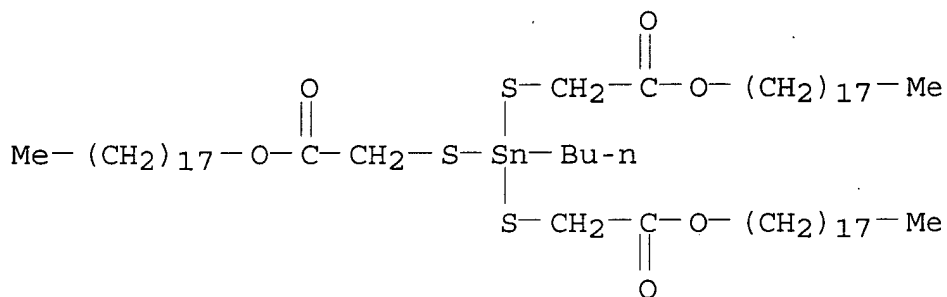
RN 32251-23-3 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexacosanoic acid, 4,4-dibutyl-7-oxo-,
octadecyl ester (9CI) (CA INDEX NAME)



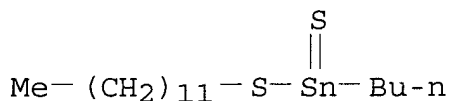
RN 57414-19-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexacosanoic acid, 4-butyl-4-[[2-(octadecyloxy)-2-oxoethyl]thio]-7-oxo-, octadecyl ester (9CI) (CA INDEX NAME)



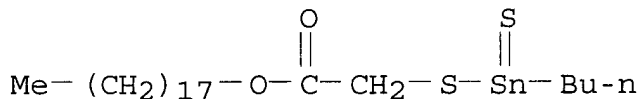
RN 182221-37-0 ZCAPLUS

CN Stannane, butyl(dodecylthio)thioxo- (9CI) (CA INDEX NAME)



RN 182221-39-2 ZCAPLUS

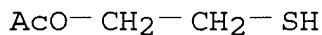
CN Acetic acid, [(butylthioxostannyl)thio]-, octadecyl ester (9CI) (CA INDEX NAME)



IT 5862-40-8, 2-Mercaptoethyl acetate
(for prepn. of thioorganostannic derivs.)

RN 5862-40-8 ZCAPLUS

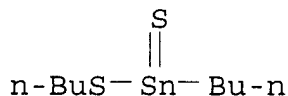
CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



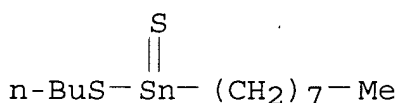
IT 182221-43-8P, Butyl(butylthio)(thio)stannane
196940-47-3P, (Butylthio)(octyl)(thio)stannane
196940-48-4P, Butyl(2-(1-ethylhexyloxycarbonyl)ethylthio)(thio)stannane 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane

(prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

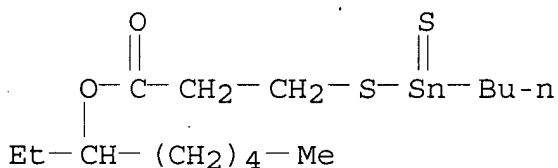
RN 182221-43-8 ZCAPLUS
 CN Stannane, butyl(butylthio)thioxo- (9CI) (CA INDEX NAME)



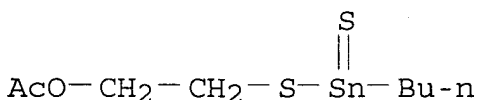
RN 196940-47-3 ZCAPLUS
 CN Stannane, (butylthio)octylthioxo- (9CI) (CA INDEX NAME)



RN 196940-48-4 ZCAPLUS
 CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 1-ethylhexyl ester (9CI) (CA INDEX NAME)

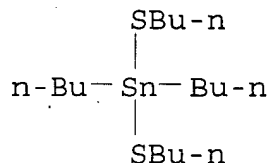


RN 196940-49-5 ZCAPLUS
 CN Ethanol, 2-[(butylthioxostannyl)thio]-, acetate (9CI) (CA INDEX NAME)

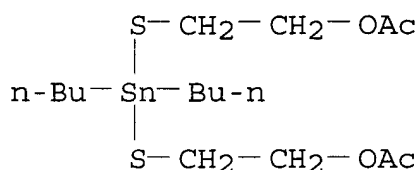


IT 3065-53-0P, Dibutylbis(butylthio)stannane
 67874-47-9P, Bis(2-acetoxyethylthio)dibutylstannane
 196940-46-2P, Dibutylbis(2-(1-ethylhexyloxycarbonyl)ethylthio)stannane
 (prepn. and reaction; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

RN 3065-53-0 ZCAPLUS
 CN Stannane, dibutylbis(butylthio)- (8CI, 9CI) (CA INDEX NAME)

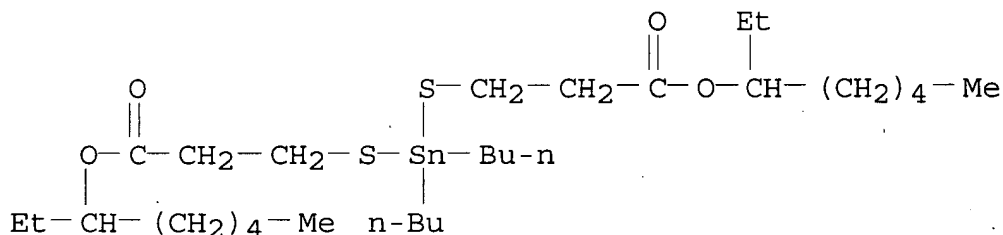


RN 67874-47-9 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannadecan-1-ol, 4,4-dibutyl-9-oxo-, acetate
(9CI) (CA INDEX NAME)

RN 196940-46-2 ZCAPLUS

CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5,5-dibutyl-11-ethyl-9-oxo-, 1-ethylhexyl ester (9CI) (CA INDEX NAME)



IT 27574-38-5, Dibutylbis(methyl thioglycolato)stannane
 32251-23-3, Dibutylbis(octadecyloxycarbonylmethylthio)stannane
 57414-19-4, Butyltris(octadecyloxycarbonylmethylthio)stannane
 182221-37-0, Butyl(dodecylthio)(thio)stannane
 182221-39-2, Butyl(octadecyloxycarbonylmethylthio)tin sulfide

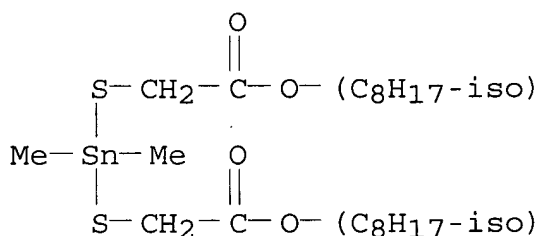
(DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

IT 5862-40-8, 2-Mercaptoethyl acetate
 (for prepn. of thioorganostannic derivs.)

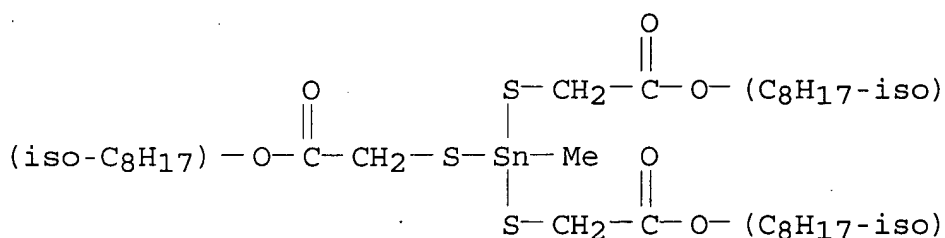
IT 182221-43-8P, Butyl(butylthio)(thio)stannane
 196940-47-3P, (Butylthio)(octyl)(thio)stannane
 196940-48-4P, Butyl(2-(1-ethylhexyloxycarbonyl)ethylthio)(thio)stannane
 196940-49-5P, (2-Acetoxyethylthio)(butyl)(thio)stannane

(prepn. and reaction of polymeric; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)

- IT 3065-53-0P, Dibutylbis(butylthio)stannane
 67874-47-9P, Bis(2-acetoxyethylthio)dibutylstannane
 196940-46-2P, Dibutylbis(2-(1-ethylhexyloxycarbonyl)ethylthio)stannane
 (prepn. and reaction; DSC study of reaction of tert-Bu hydroperoxide with thioorganostannic derivs.)
- L48 ANSWER 3 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1996:11343 Document No. 124:89107 Thermally stable chlorine-containing resin compositions with good processability. Tsujimoto, Hideo; Ogata, Koichi (Sakai Chemical Industry Co, Japan). Jpn. Kokai Tokkyo Koho JP 07268157 A2 19951017 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-95397 19940328.
- AB The compns. contain Ca(OH)₂, 2-mercaptoethanol fatty acid esters, and S-contg. alkyltin compds. Thus, a compn. contg. PVC 100, Ca(OH)₂ 0.5, di-n-octyltin bis(isooctylthioglycolate) 0.4, monobutyltin sulfide 0.1, 2-mercaptoethanol oleate 0.5, and other additives 4.5 parts could be extrusion-molded at output 26.0 kg/h and gave moldings with good appearance.
- IT 26636-01-1, Dimethyltin bis(isooctylthioglycolate)
 54849-38-6, Methyltin tris(isooctylthioglycolate)
 59118-78-4, 2-Mercaptoethyl oleate
 (stabilizer; thermally stable chlorine-contg. resin compns. with good processability)
- RN 26636-01-1 ZCAPLUS
 CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



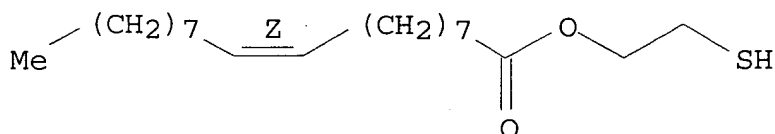
- RN 54849-38-6 ZCAPLUS
 CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

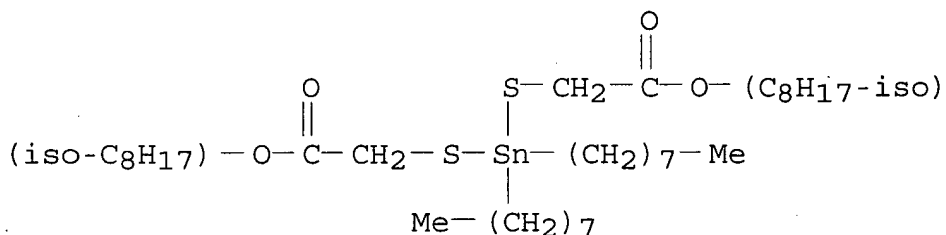


IT 26401-97-8

(thermally stable chlorine-contg. resin compns. with good processability)

RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



IT 26636-01-1, Dimethyltin bis(isooctylthioglycolate)

54849-38-6, Methyltin tris(isooctylthioglycolate)

59118-78-4, 2-Mercaptoethyl oleate

(stabilizer; thermally stable chlorine-contg. resin compns. with good processability)

IT 26401-97-8

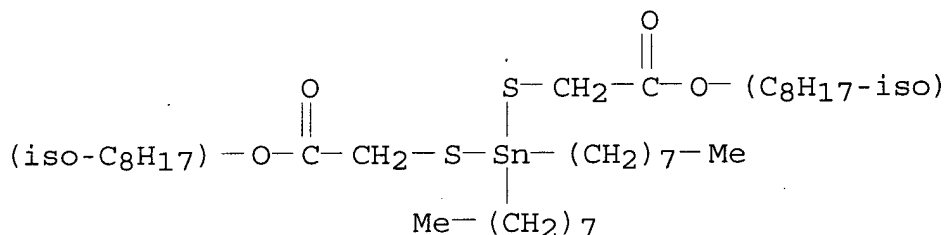
(thermally stable chlorine-contg. resin compns. with good processability)

L48 ANSWER 4 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

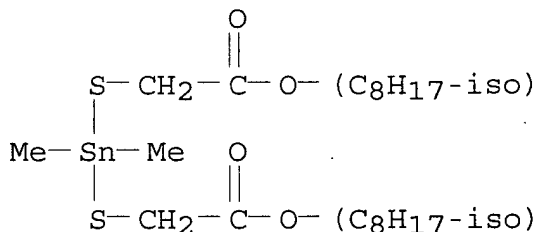
1995:999813 Document No. 124:89079 Stabilizers for chlorine-containing

resin compositions. Tsujimoto, Hideo; Ogata, Koichi (Sakai Chemical Industry Co, Japan). Jpn. Kokai Tokkyo Koho JP 07258491 A2 19951009 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-90464 19940322.

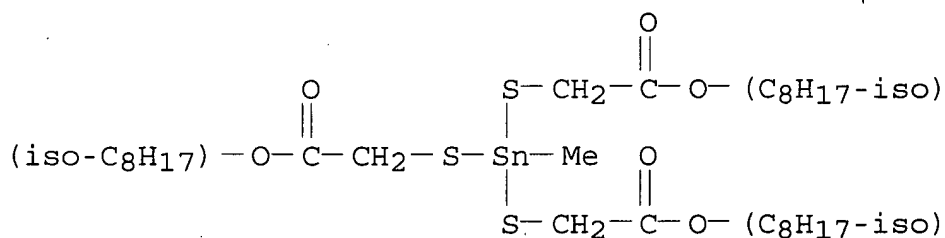
- AB The title compns. contain 2-mercaptoethanol fatty acid esters and S-contg. alkyltin compds. as stabilizers. Thus, PVC 100, CaCO₃ 3, SC 100 (Ca stearate) 0.5, ester lubricant 1, dioctyltin bis(isooctyl thioglycolate) 1.5, and 2-mercaptoethanol oleate 0.5 part were extrusion molded to give a pipe.
- IT 26401-97-8, Dioctyltin bis(isooctyl thioglycolate)
 26636-01-1, Dimethyltin bis(isooctyl thioglycolate)
 54849-38-6 59118-78-4, 2-Mercaptoethyl oleate
 (Cl-contg. resin compns. contg. 2-mercaptoethanol fatty acid esters and S-contg. alkyltin compds. as stabilizers)
- RN 26401-97-8 ZCAPLUS
- CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



- RN 26636-01-1 ZCAPLUS
- CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



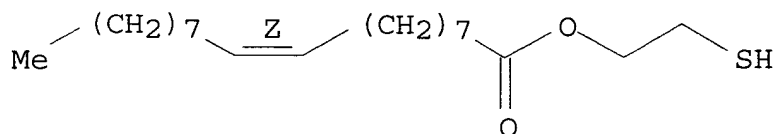
- RN 54849-38-6 ZCAPLUS
- CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 26401-97-8, Dioctyltin bis(isooctyl thioglycolate)
 26636-01-1, Dimethyltin bis(isooctyl thioglycolate)
 54849-38-6 59118-78-4, 2-Mercaptoethyl oleate
 (Cl-contg. resin compns. contg. 2-mercaptoethanol fatty acid esters and S-contg. alkyltin compds. as stabilizers)

L48 ANSWER 5 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

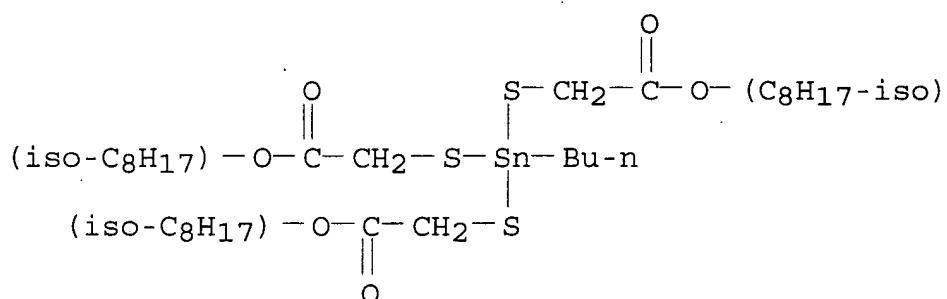
1995:205921 Document No. 122:32993 Organotin stabilizer mixture.
 Anderson, Donald F.; Walter, Steven (Akzo Nobel N.V., Neth.). U.S.
 US 5354508 A 19941011, 4 pp. (English). CODEN: USXXAM.
 APPLICATION: US 1993-160534 19931201.

AB An organotin stabilizer mixt. comprising: (a) monoalkyltin mercaptoalc. $\text{RSn}(\text{SR}'\text{OH})_3$, wherein R is lower alkyl and R' is lower alkylene (b) a monoalkyltin mercaptoacid ester $\text{RSn}(\text{SR}'\text{CO}_2\text{R}'')_3$, where R is lower alkyl, R' is lower alkylene, and R'' is C6 to C10 alkyl; and (c) a monoalkyltin sulfide provides improved early color, lubricity, and weatherability to rigid vinyl polymer formulations. The formulation may also contain a monoalkyltin mercaptoalc. ester as an optional component.

IT 25852-70-4P, Monobutyltin tris(isooctylthioglycolate)
 67361-76-6P 70729-71-4P
 (organotin stabilizer mixt.)

RN 25852-70-4 ZCAPLUS

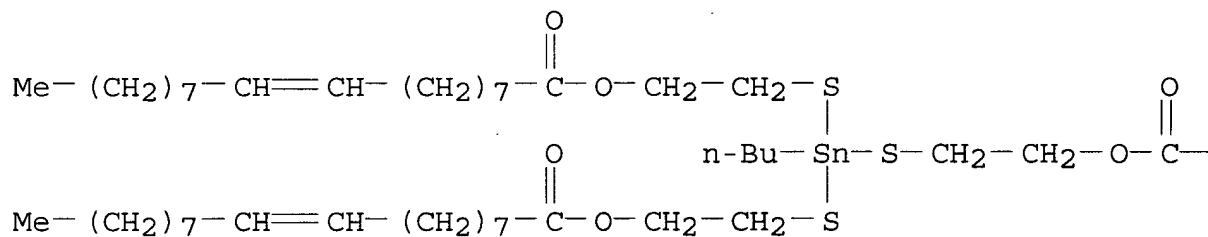
CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



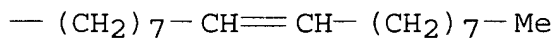
RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

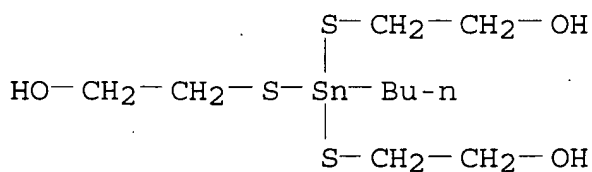


PAGE 1-B



RN 70729-71-4 ZCAPLUS

CN	Ethanol, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-	(9CI)	(CA
	INDEX NAME)		



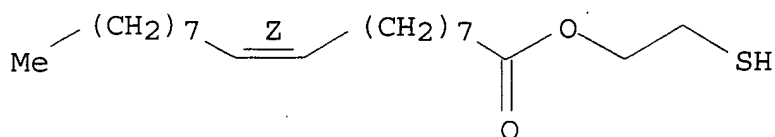
IT 59118-78-4, 2-Mercaptoethyl oleate

(organotin stabilizer mixt.)

RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

IT 25852-70-4P, Monobutyltin tris(isooctylthioglycolate)
67361-76-6P 70729-71-4P

(organotin stabilizer mixt.)

IT 59118-78-4, 2-Mercaptoethyl oleate
(organotin stabilizer mixt.)

L48 ANSWER 6 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

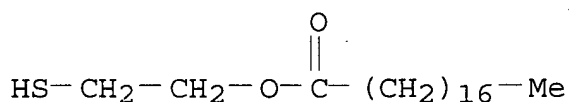
1993:125812 Document No. 118:125812 Heat- and discoloration-resistant chlorinated PVC compositions. Oomoto, Masanobu; Kawamoto, Kazuo; Kakei, Hiroshi (Sekisui Chemical Co., Ltd., Japan; Tokuyama Soda Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 04198348 A2 19920717 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-327331 19901127.

AB The title compns. comprise chlorinated PVC contg. 0.05-5 phr alkyltin compds. and 0.05-5 phr S- and/or Cl-contg. alkyltin compds. and/or metal halides. Thus, a molding prepd. by molding HA 15F contg. MBS (Metablen C 150S) 10, Hiwax 4202E, dioctyltin sulfide 2, and monooctyltin(isooctylmercaptoacetate) chloride (I) 1 phr at 180.degree. for 7 min had yellowness 33, vs. 43 without I.

IT 27564-01-8, 2-Mercaptoethylstearate 70892-79-4
(chlorinated PVC contg. alkyltin compds. and, heat-resistant)

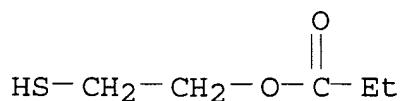
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

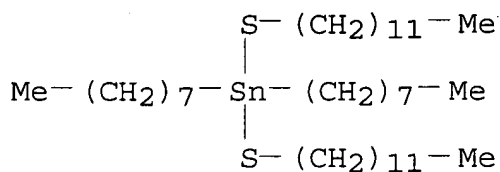


RN 70892-79-4 ZCAPLUS

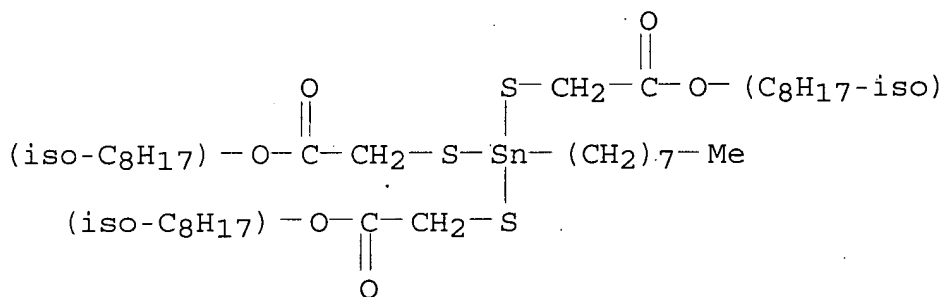
CN Ethanol, 2-mercapto-, 1-propanoate (9CI) (CA INDEX NAME)



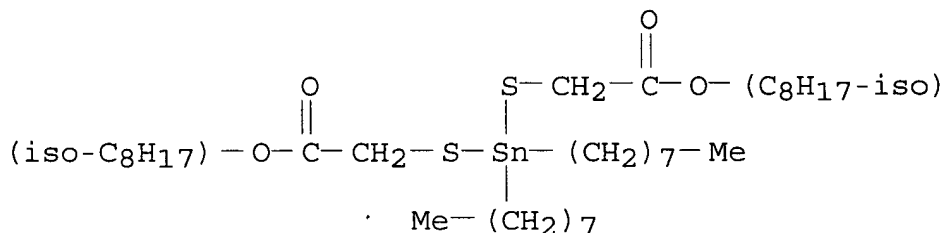
IT 22205-30-7 26401-86-5, Monooctyltin
 tris(isooctylmercaptoacetate) 26401-97-8, Dioctyltin
 bis(isooctylmercaptoacetate) 53050-37-6
 145821-67-6 145821-68-7 145821-70-1
 145850-34-6
 (heat stabilizers, for chlorinated PVC)
 RN 22205-30-7 ZCAPLUS
 CN Stannane, bis(dodecylthio)dioctyl- (8CI, 9CI) (CA INDEX NAME)



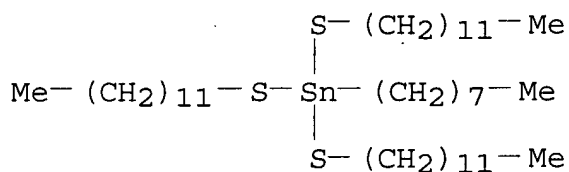
RN 26401-86-5 ZCAPLUS
 CN Acetic acid, 2,2',2''-[(octylstannylidyne)tris(thio)]tris-,
 triisooctyl ester (9CI) (CA INDEX NAME)



RN 26401-97-8 ZCAPLUS
 CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl
 ester (9CI) (CA INDEX NAME)

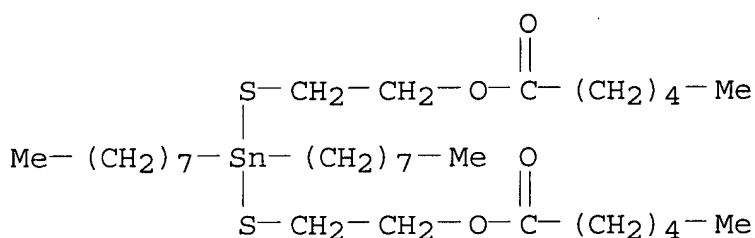


RN 53050-37-6 ZCAPLUS
 CN Stannane, tris(dodecylthio)octyl- (9CI) (CA INDEX NAME)



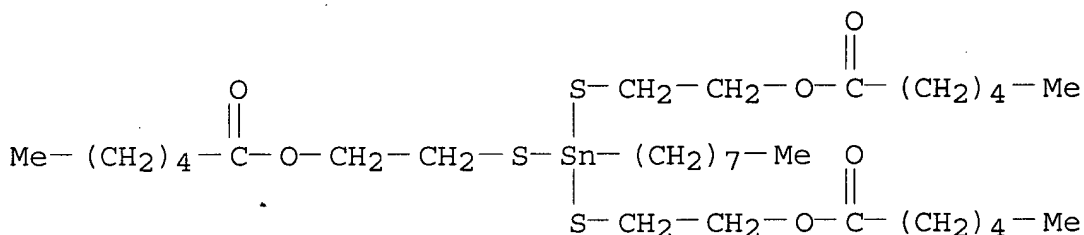
RN 145821-67-6 ZCAPLUS

Hexanoic acid, (dioctylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



RN 145821-68-7 ZCAPLUS

RXN 115021 00 7 120K 100
 CN Hexanoic acid, (octylstannylidyne)tris(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)

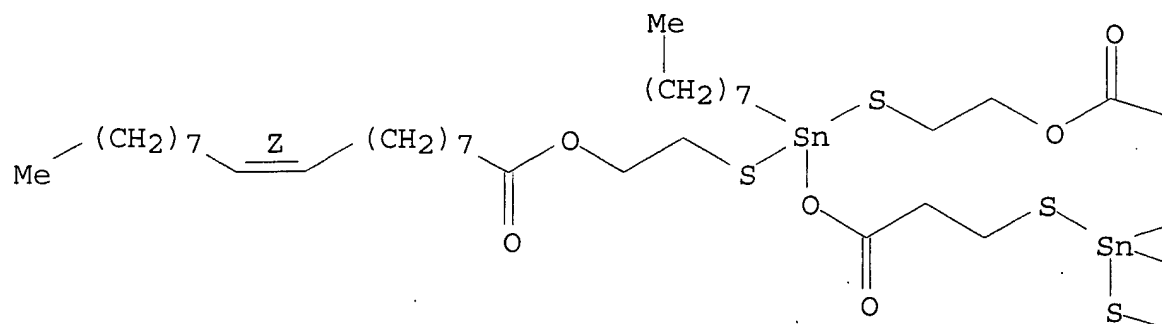


RN 145821-70-1 ZCAPLUS

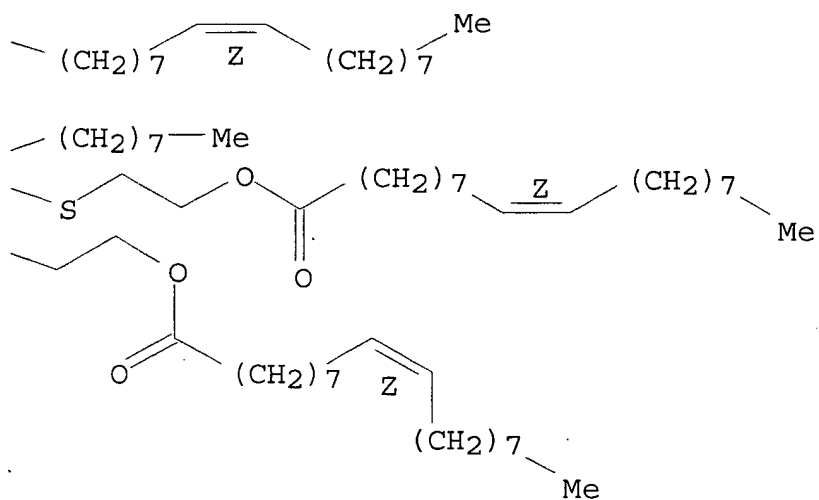
CN 9-Octadecenoic acid (9Z)-, 4,10-dioctyl-6-oxo-4,10-bis[[2-[[[(9Z)-1-oxo-9-octadecenyl]oxy]ethyl]thio]-5-oxa-3,9,11-trithia-4,10-distannatridecane-1,13-diyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

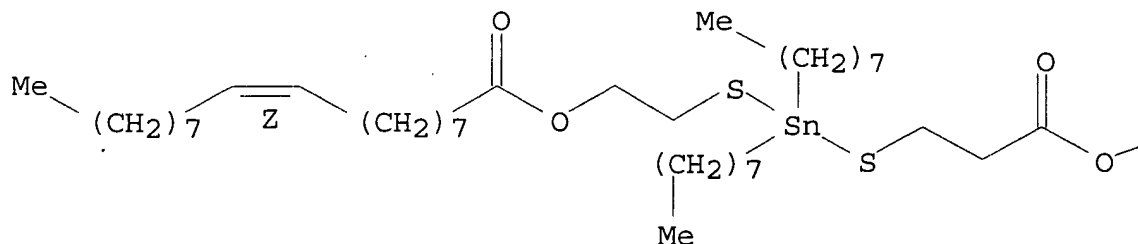


RN 145850-34-6 ZCAPLUS

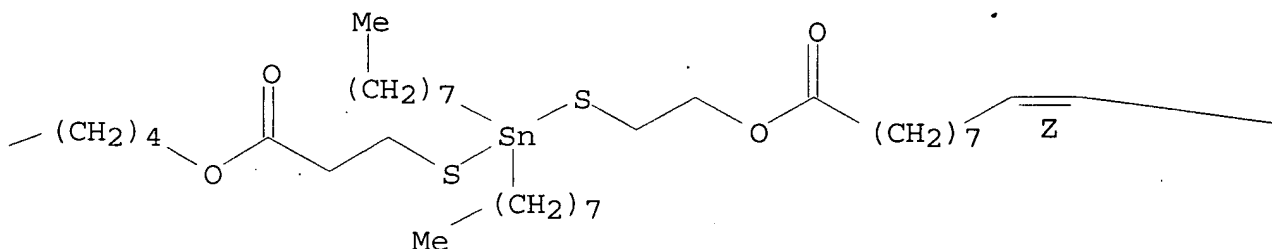
CN 9-Oxa-4,6-dithia-5-stannaheptacos-18-enoic acid,
 5,5-dioctyl-10-oxo-, 1,4-butanediyl ester, (Z,Z)- (9CI) (CA INDEX
 NAME)

Double bond geometry as shown.

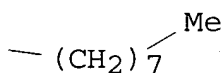
PAGE 1-A



PAGE 1-B



PAGE 1-C



- IT 27564-01-8, 2-Mercaptoethylstearate 70892-79-4
 (chlorinated PVC contg. alkyltin compds. and, heat-resistant)
- IT 22205-30-7 26401-86-5, Monooctyltin
 tris(isooctylmercaptoacetate) 26401-97-8, Dioctyltin
 bis(isooctylmercaptoacetate) 53050-37-6
 145821-67-6 145821-68-7 145821-70-1
 145850-34-6
 (heat stabilizers, for chlorinated PVC)

L48 ANSWER 7 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1987:120858 Document No. 106:120858 Sulfur compound-organotin compound
 mixtures as heat stabilizers for halogenated resins. Bohen, Joseph
 M. (Pennwalt Corp. , USA). Eur. Pat. Appl. EP 208044 A2 19870114,
 22 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (English).
 CODEN: EPXXDW. APPLICATION: EP 1986-100014 19860102. PRIORITY: US
 1985-751392 19850703.

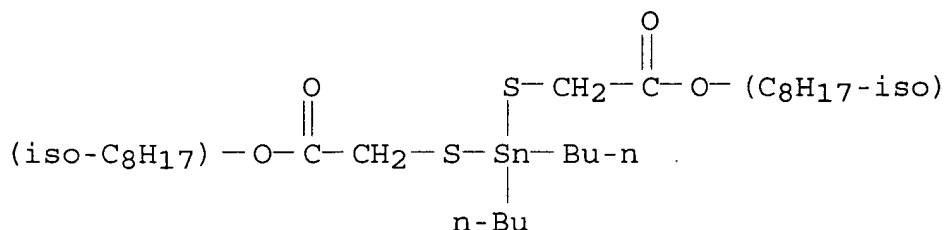
AB Mixts. for the title use comprise (a) alkali or alk. earth metal

salts of mercaptans or mercapto acids, optionally .ltoreq.96% replaced by overbased org. complexes of metal bases, and (b) R1a(R2S)3-aSnSmSnR3b(SR4)3-b [R1-4 = (un)substituted alkyl or aryl, a,b = 1 or 2, m = 1-10] or combinations of organotin sulfides and .ltoreq.99.5% organotin mercaptides with CSnS groups. A mixt. of PVC 100, 10:90 Et acrylate-Me acrylate copolymer processing aid 2.0, acrylic impact modifier 7.0, wax 1.0, partially sapond. ester was 0.1, Ca stearate 1.5, TiO2 10.0, dimethyltin bis(2-mercaptoethyl stearate) 0.45, methyltin tris(2-mercaptoethyl stearate) 0.20, methyltin sesquisulfide 0.10, and Ba bis(2-mercaptoethyl stearate) 0.75 parts had Brabender-dynamic-heat-stability failure time 28 min.

IT 25168-24-5, Dibutyltinbis(isooctylthioglycolate)
 25852-70-4, Butyltintris(isooctylthioglycolate)
 26401-86-5, Octyltintris(isooctylthioglycolate)
 26401-97-8, Dioctyltinbis(isooctylthioglycolate)
 26636-01-1, Dimethyltinbis(isooctylthioglycolate)
 54849-38-6, Monomethyltintris(isooctylthioglycolate)
 59118-76-2, Methyltintris(2-mercaptoethylstearate)
 59118-79-5, Methyltintris(2-mercaptoethyloleate)
 59138-44-2, Dimethyltinbis(2-mercaptoethylstearate)
 67859-63-6, Dimethyltinbis(2-mercaptoethyloleate)
 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
 2-mercaptoethyl stearate 95115-35-8 107258-68-4
 (heat stabilizers, for halogenated resins)

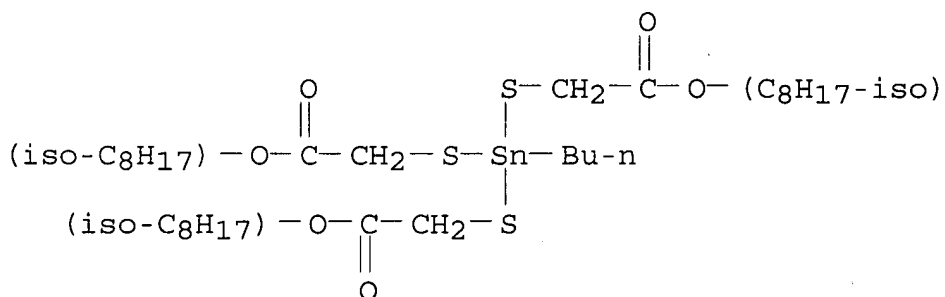
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



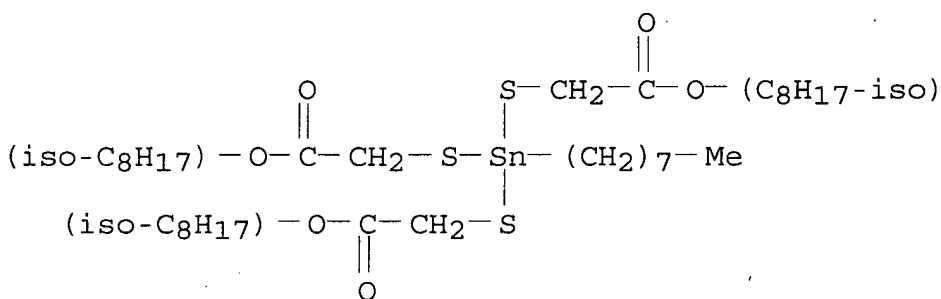
RN 25852-70-4 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



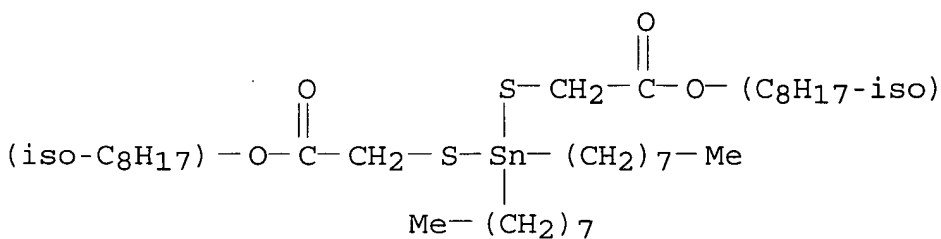
RN 26401-86-5 ZCAPLUS

CN Acetic acid, 2,2',2''-[(octylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



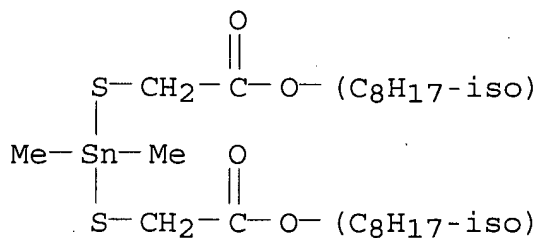
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



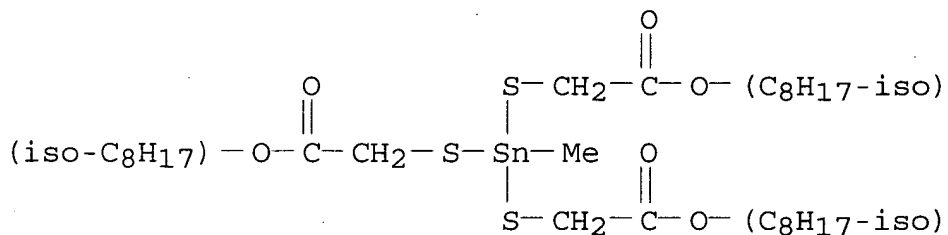
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



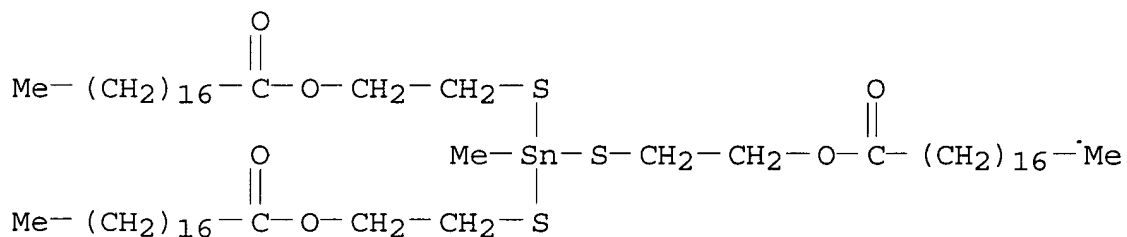
RN 54849-38-6 ZCAPLUS

CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 59118-76-2 ZCAPLUS

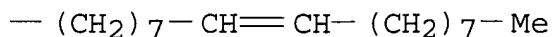
CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59118-79-5 ZCAPLUS

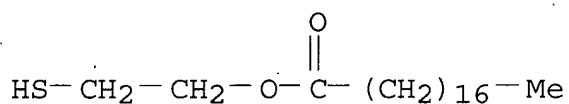
CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-B



RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

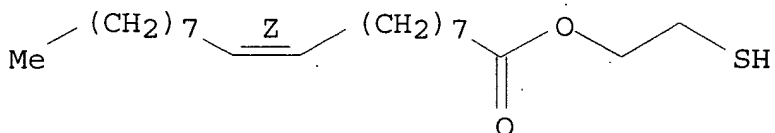


● 1/2 Ba

RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.

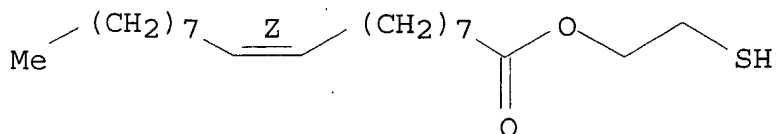


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)

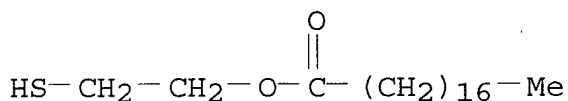
Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

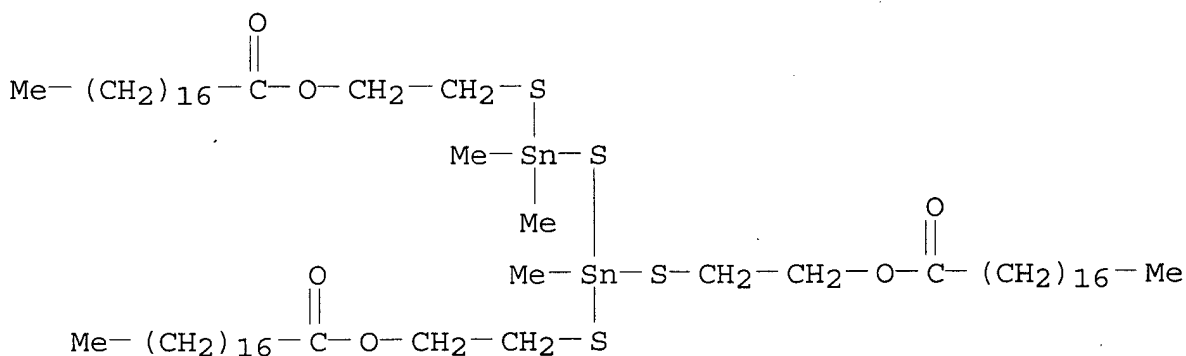
CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)



● 1/2 Ca

RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

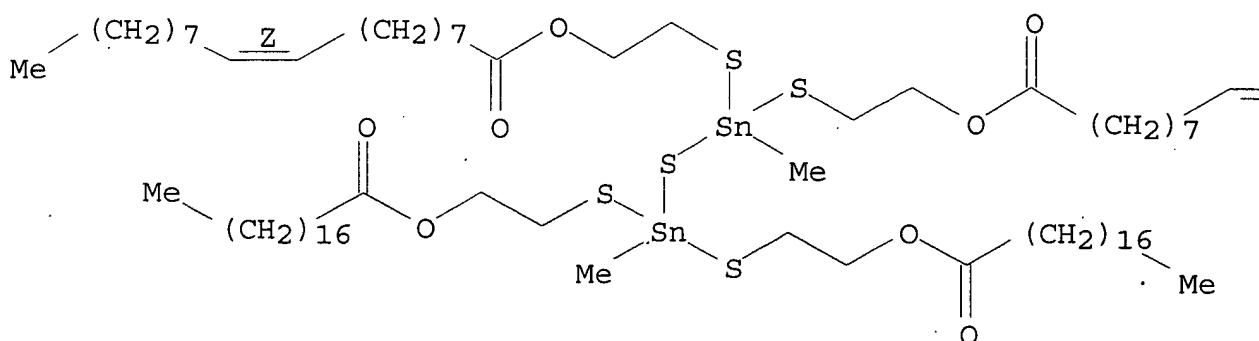


RN 107258-68-4 ZCAPLUS

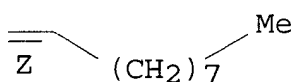
CN 9-Octadecenoic acid (9Z)-, [1,3-dimethyl-3,3-bis[[2-[(1-oxooctadecyl)oxy]ethyl]thio]distannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 25168-24-5, Dibutyltinbis(isooctylthioglycolate)
 25852-70-4, Butyltintris(isooctylthioglycolate)
 26401-86-5, Octyltintris(isooctylthioglycolate)
 26401-97-8, Dioctyltinbis(isooctylthioglycolate)
 26636-01-1, Dimethyltinbis(isooctylthioglycolate)
 54849-38-6, Monomethyltintris(isooctylthioglycolate)
 59118-76-2, Methyltintris(2-mercaptoethylstearate)
 59118-79-5, Methyltintris(2-mercaptoethyloleate)
 59138-44-2, Dimethyltinbis(2-mercaptoethylstearate)
 67859-63-6, Dimethyltinbis(2-mercaptoethyloleate)
 69128-10-5, Barium 2-mercaptoethyl stearate
 85508-82-3, Barium 2-mercaptoethyl oleate 85508-84-5
 , Calcium 2-mercaptoethyl oleate 85508-85-6, Calcium
 2-mercaptoethyl stearate 95115-35-8 107258-68-4
 (heat stabilizers, for halogenated resins)

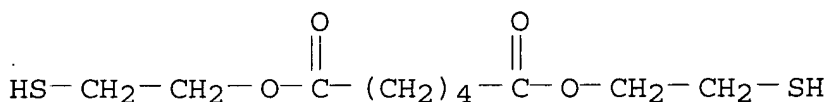
L48 ANSWER 8 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1987:120817 Document No. 106:120817 Sterilization of objects made of halogeno-vinyl polymers using ionizing radiation. Kornbaum, Simon; Chenard, Jean Yves (Atochem S. A., Fr.). U.S. US 4616046 A 19861007, 8 pp. Cont.-in-part of U.S. Ser. No. 565,522, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1984-607510 19840507. PRIORITY: FR 1980-21662 19801010; US 1981-309434 19811007; US 1983-565522 19831228.

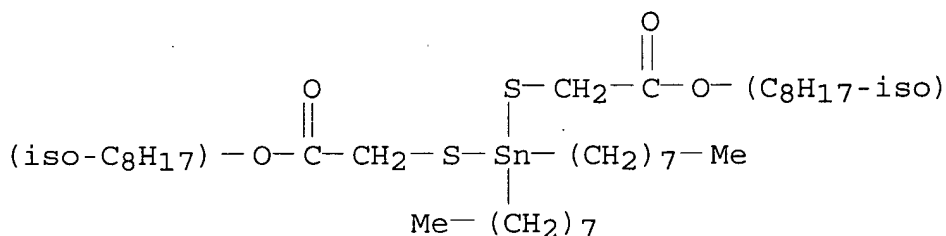
AB Discoloration of PVC packaging materials by radiochem. sterilization can be prevented by adding heat stabilizers, e.g., org. Sn and Sb compds., and thiol esters contg. 1 SH group/3-10 C. Thus, PVC moldings contg. 0.9 phr poly(alkyl acrylate) (Paraloid K 120 N), 0.7 phr styrene-alkyl acrylate copolymer (Paraloid K 175), 10 phr

methacrylate-butadiene-styrene terpolymer (Kane ACE-B28A), 1.5 phr (C₈H₁₇)₂Sn(SCH₂CO₂C₈H₁₇-iso)₂, 3 phr Irgastab A 70, and 1.2 phr glyceryl monostearate was colorless after .gamma.-irradn. at 0.46-2.76 Mrad, compared to yellow to red without mercaptan ester.

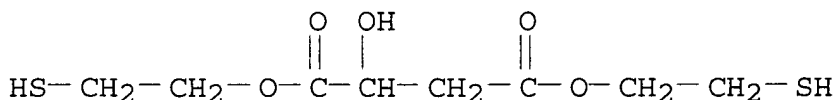
IT 10194-00-0, Bis(2-mercaptoethyl) adipate 26401-97-8
 , Diisooctyl [(dioctylstannylene)dithio]diacetate 82530-57-2
 , Bis(2-mercaptoethyl) hydroxysuccinate 82530-58-3,
 Bis(4-mercapto butyl) succinate 82538-18-9, Bis(3-mercapto propyl) malonate
 (stabilizers, for PVC in radiochem. sterilization)
 RN 10194-00-0 ZCAPLUS
 CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



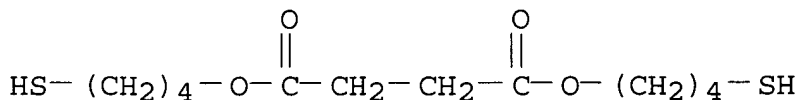
RN 26401-97-8 ZCAPLUS
 CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



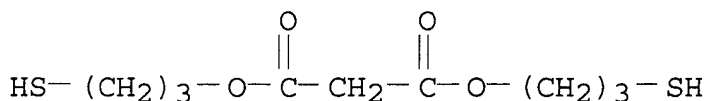
RN 82530-57-2 ZCAPLUS
 CN Butanedioic acid, hydroxy-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 82530-58-3 ZCAPLUS
 CN Butanedioic acid, bis(4-mercaptobutyl) ester (9CI) (CA INDEX NAME)



RN 82538-18-9 ZCAPLUS
 CN Propanedioic acid, bis(3-mercaptopropyl) ester (9CI) (CA INDEX NAME)



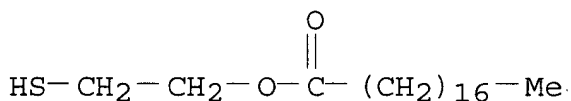
IT 10194-00-0, Bis(2-mercптоethyl) adipate 26401-97-8
 , Diisooctyl [(dioctylstannylene)dithio]diacetate 82530-57-2
 , Bis(2-mercптоethyl) hydroxysuccinate 82530-58-3,
 Bis(4-mercпто butyl) succinate 82538-18-9, Bis(3-mercпто
 propyl) malonate
 (stabilizers, for PVC in radiochem. sterilization)

L48 ANSWER 9 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1987:120801 Document No. 106:120801 Stabilizer compositions for
 poly(vinyl chloride). Kugele, Thomas G.; Mesch, Keith A.;
 Wursthorn, Karl R. (Morton Thiokol, Inc., USA). U.S. US 4617334 A
 19861014, 17 pp. Cont. of U.S. Ser. No. 406,586, abandoned.
 (English). CODEN: USXXAM. APPLICATION: US 1984-654580 19840924.
 PRIORITY: US 1982-406586 19820809.

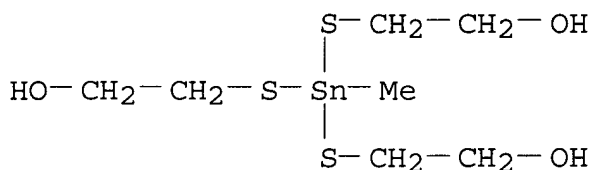
AB A compn. used to stabilize halogen-contg. polymers against heat
 degrdn. contains org. Sb compds., having .gtoreq.1 SbSC linkage,
 mercaptan-contg. org. compds., and metal mercпто alcs. having
 .gtoreq.1 nonbenzylic Sb or Sn atom bonded to S. The stabilized
 polymers are useful in the manuf. of pipes. A PVC (Geon 103
 EP-F-76) compn. contg. Sb(SCH2CO2C8H17)3 0.3, HSCH2CH2O2CC17H33 0.1,
 and Sn(SCH2CH2OH)4 0.05 phr was masticated at 193.degree., and
 exhibited no obvious color change, up to 5 min.

IT 27564-01-8, 2-Mercптоethyl stearate 85758-50-5
 103956-48-5 104033-28-5
 (heat stabilizers contg., for PVC)

RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercптоethyl ester (9CI) (CA INDEX NAME)

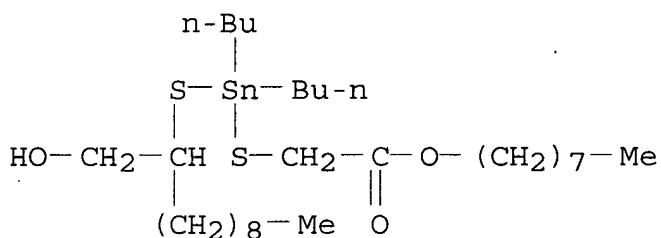


RN 85758-50-5 ZCAPLUS
 CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris- (9CI) (CA INDEX NAME)



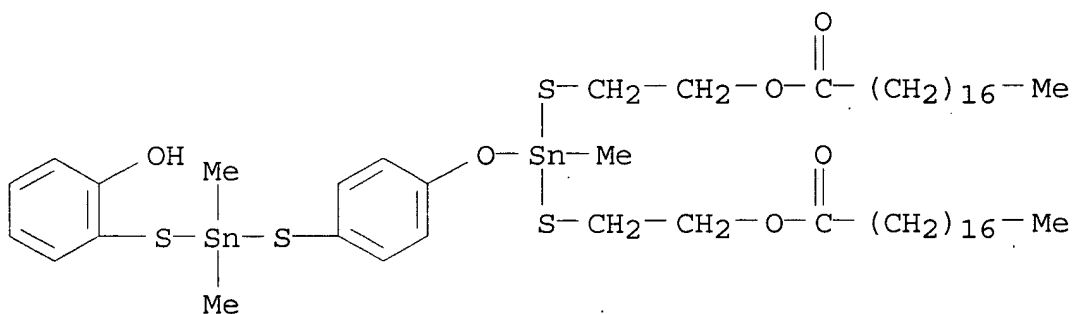
RN 103956-48-5 ZCAPLUS

CN Acetic acid, [[dibutyl[[1-(hydroxymethyl)decyl]thio]stannyl]thio]-, octyl ester (9CI) (CA INDEX NAME)



RN 104033-28-5 ZCAPLUS

CN Octadecanoic acid, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



IT 27564-01-8, 2-Mercaptoethyl stearate 85758-50-5
 103956-48-5 104033-28-5
 (heat stabilizers contg., for PVC)

L48 ANSWER 10 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1986:498600 Document No. 105:98600 Stabilizers for polymers. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Can. CA 1202170. A1 19860325, 70 pp. (English). CODEN: CAXXA4. APPLICATION: CA 1983-435649 19830830.

AB Heat stabilizers for halogenated polymers comprise synergic mixts. of Sb mercaptides; thiols; and hydroxylated Sn or Sb mercaptides.

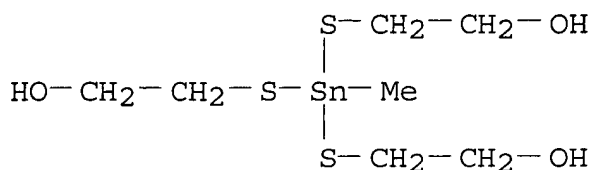
Thus, compounded PVC contg. Sb(SCH₂CO₂C₈H₁₇)₃ 0.3, HS(CH₂)₂₀CCl₇H₃₃ (I) 0.1, and Sn[S(CH₂)₂OH]₄ (II) 0.05 phr had color rating 10 (10 white, 0 burnt) after milling 5 min at .apprx.193.degree., compared with 8 without II or III.

IT 85758-50-5 103956-48-5 104033-27-4
104033-29-6

(heat stabilizers, for PVC)

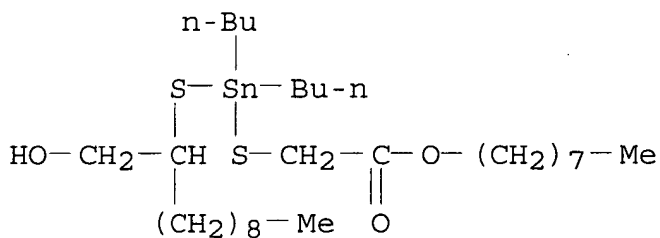
RN 85758-50-5 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris- (9CI) (CA INDEX NAME)



RN 103956-48-5 ZCAPLUS

CN Acetic acid, [[dibutyl[[1-(hydroxymethyl)decyl]thio]stannyl]thio]-, octyl ester (9CI) (CA INDEX NAME)



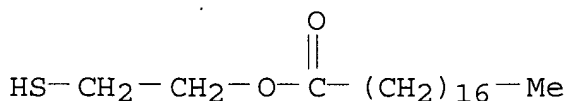
RN 104033-27-4 ZCAPLUS

CN Octadecenoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 27564-01-8

CMF C20 H40 O2 S



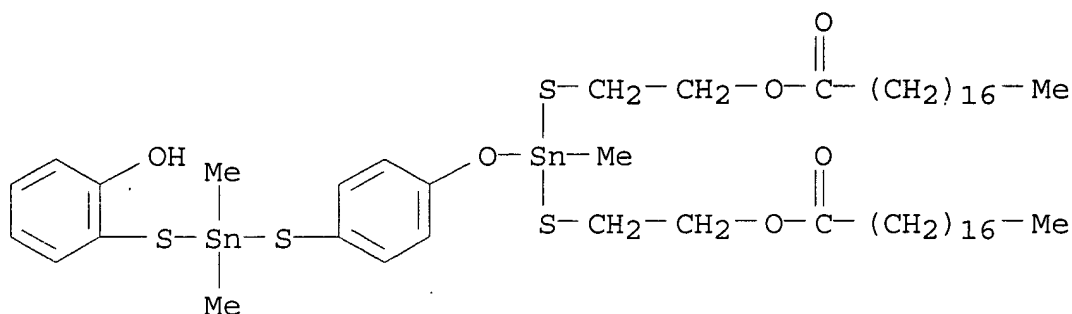
RN 104033-29-6 ZCAPLUS

CN Octadecenoic acid, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

CM 1

CRN 104033-28-5

CMF C55 H96 O6 S4 Sn2



IT 85758-50-5 103956-48-5 104033-27-4
 104033-29-6
 (heat stabilizers, for PVC)

L48 ANSWER 11 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

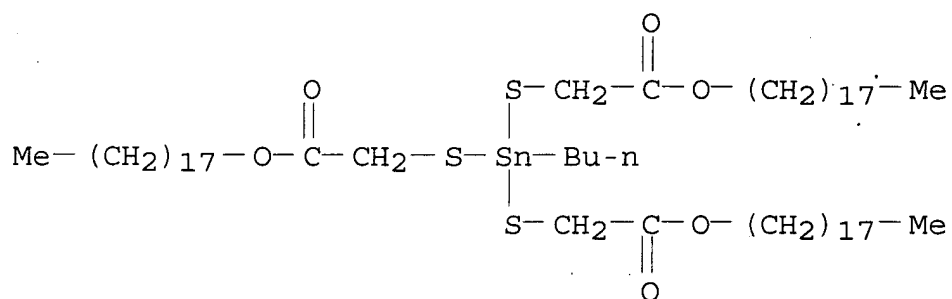
1986:225735 Document No. 104:225735 An evaluation of the effects of antimony and tin stabilizer on the fusion characteristics of PVC dryblends. Clark, Dane L.; Hollo, Brenda J.; Tornstrom, Paul K.; Turnbull, Robert E.; Woodley, Tom R. (Synth. Prod. Co., Cleveland, OH, 44110, USA). Journal of Vinyl Technology, 8(1), 27-31 (English) 1986. CODEN: JVTEDI. ISSN: 0193-7197.

AB The Sn stabilizers did not promote fusion of PVC [9002-86-2] dry blend. Sn stabilizers with shorter chain esters (C <10) had no effect on compd. fusion and those contg. longer chain esters retarded fusion. Sb stabilizers promoted fusion in the single screw compd.; Sb stabilizers with short chain esters promoted fusion more strongly than those contg. long chain esters. Fusion times were not strongly affected by ester type. Sn and Sb stabilizers plasticized PVC to approx. the same extent, and DOP [117-81-7] plasticized PVC much more strongly.

IT 57414-19-4 59118-80-8 62084-14-4
 66899-73-8 68928-34-7 72259-65-5
 83943-32-2 85508-79-8 102525-91-7
 102565-70-8 102565-71-9 102578-19-8
 (stabilizers, for PVC, fusion in relation to)

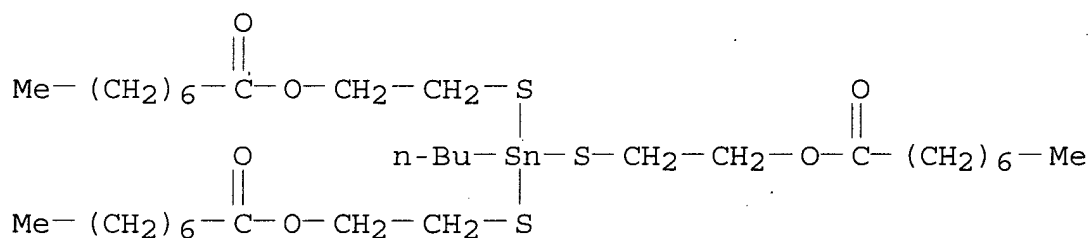
RN 57414-19-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexacosanoic acid, 4-butyl-4-[[2-(octadecyloxy)-2-oxoethyl]thio]-7-oxo-, octadecyl ester (9CI) (CA INDEX NAME)



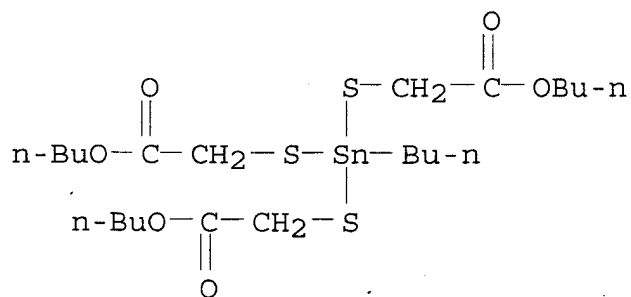
RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



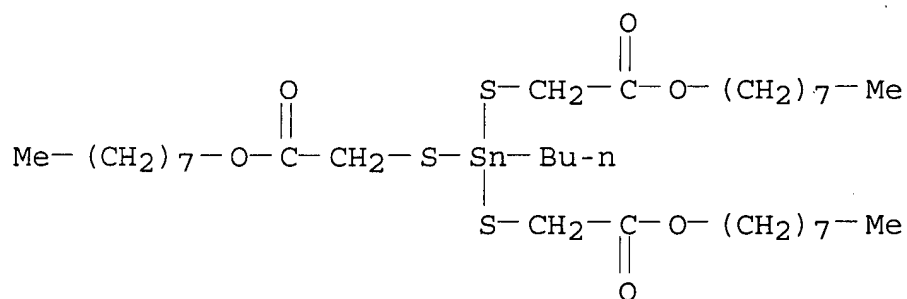
RN 62084-14-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannadodecanoic acid, 4-[(2-butoxy-2-oxoethyl)thio]-4-butyl-7-oxo-, butyl ester (9CI) (CA INDEX NAME)



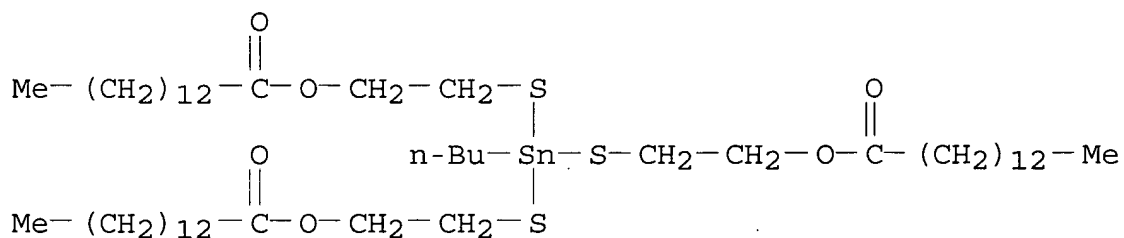
RN 66899-73-8 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-butyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



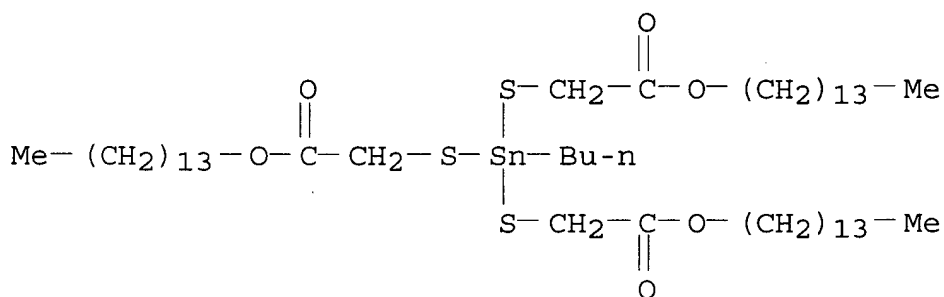
RN 68928-34-7 ZCAPLUS

CN Tetradecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



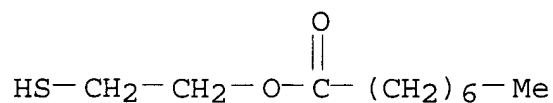
RN 72259-65-5 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, tritetradecyl ester (9CI) (CA INDEX NAME)



RN 83943-32-2 ZCAPLUS

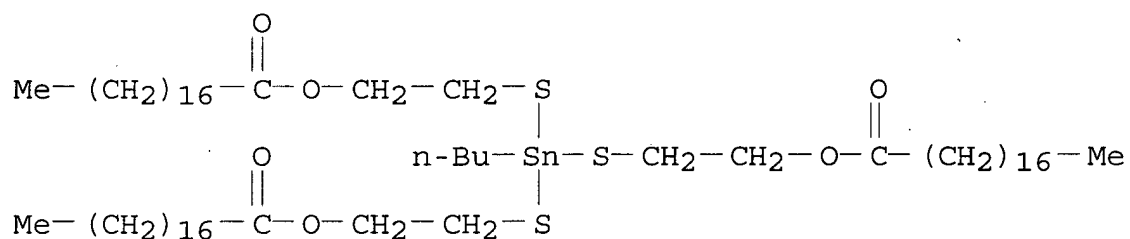
CN Octanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI) (CA INDEX NAME)



● 1/3 Sb (III)

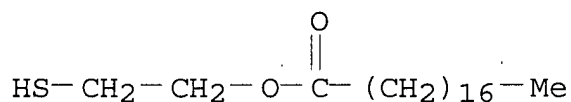
RN 85508-79-8 ZCAPLUS

CN	Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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RN 102525-91-7 ZCAPLUS

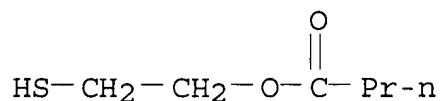
CN Octadecanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI)
(CA INDEX NAME)



● 1/3 Sb (III)

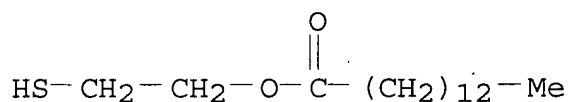
RN 102565-70-8 ZCAPLUS

CN Butanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI) (CA
INDEX NAME)



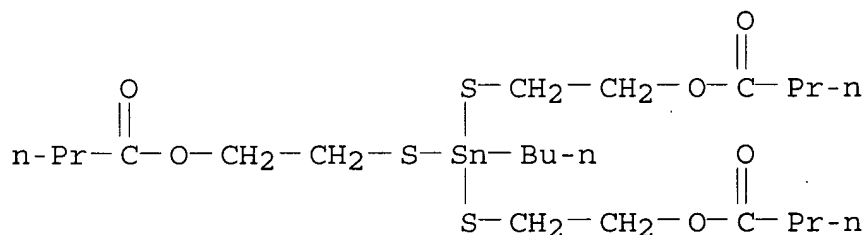
1/3 Sb(III)

RN 102565-71-9 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester, antimony(3+) salt (9CI)
(CA INDEX NAME)

● 1/3 Sb(III)

RN 102578-19-8 ZCAPLUS

CN Butanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

IT 57414-19-4 59118-80-8 62084-14-4

66899-73-8 68928-34-7 72259-65-5

83943-32-2 85508-79-8 102525-91-7

102565-70-8 102565-71-9 102578-19-8

(stabilizers, for PVC, fusion in relation to)

L48 ANSWER 12 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1985:454810 Document No. 103:54810 Characterization of organotin
stabilizers and related structure compounds by gel permeation
chromatography. Jirackova-Audouin, L.; Ranceze, D.; Verdu, J. (Dep.
Mater., ENSAM, Paris, 75013, Fr.). Analysis, 13(2), 59-64 (French)

1985. CODEN: ANLSCY. ISSN: 0365-4877.

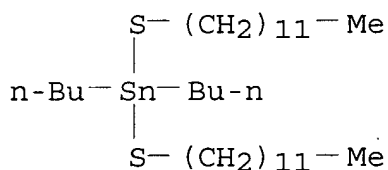
AB Gel-permeation chromatog. with refractometric and UV absorptiometric detection was useful in characterization of 26 organotin derivs., useful as heat stabilizers for PVC [9002-86-2]. The behavior of these derivs. were compared to those of org. compds. contg. the same functional groups except Sn. The structure-retention time relations were discussed.

IT 1185-81-5 15666-28-1 20004-12-0
25168-24-5 25852-70-4 26401-97-8
28570-24-3 51287-83-3 82530-60-7
85508-79-8

(gel-permeation chromatog. of, for heat stabilizers, for PVC)

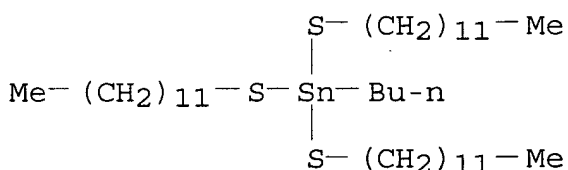
RN 1185-81-5 ZCAPLUS

CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



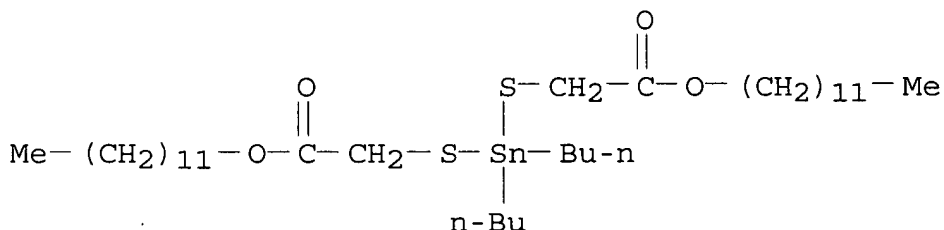
RN 15666-28-1 ZCAPLUS

CN Stannane, butyltris(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



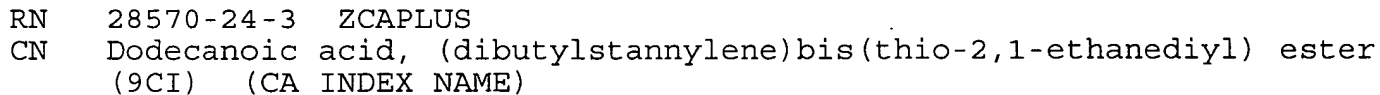
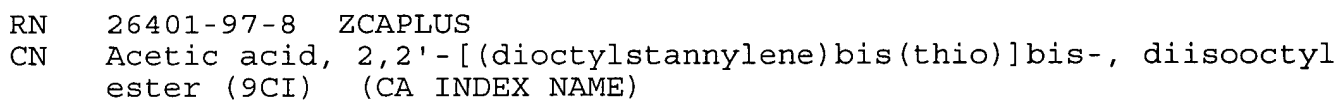
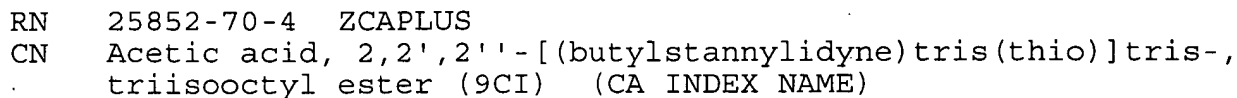
RN 20004-12-0 ZCAPLUS

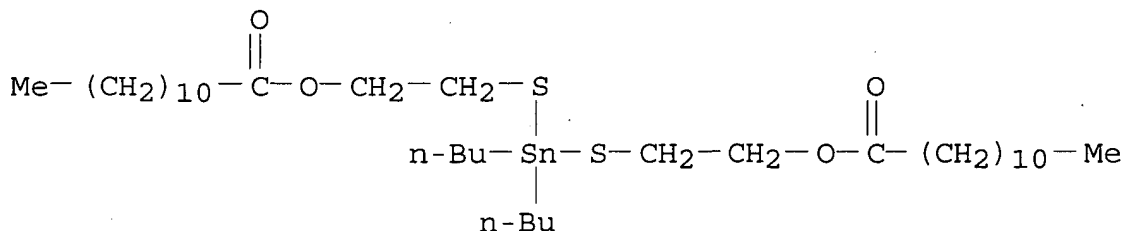
CN 8-Oxa-3,5-dithia-4-stannaeicosanoic acid, 4,4-dibutyl-7-oxo-, dodecyl ester (9CI) (CA INDEX NAME)



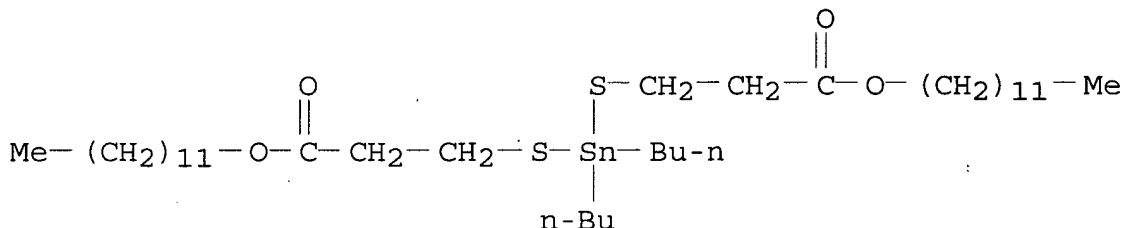
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

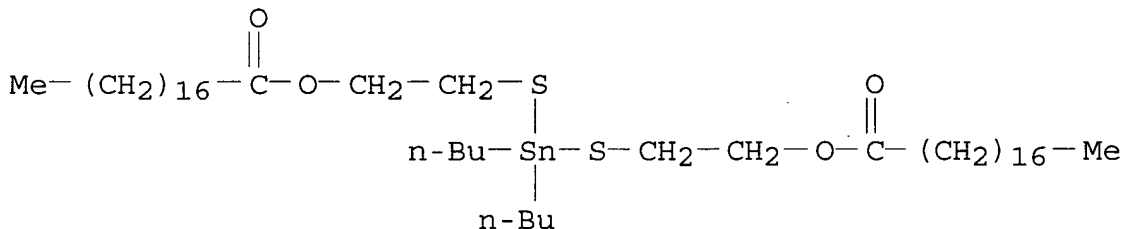




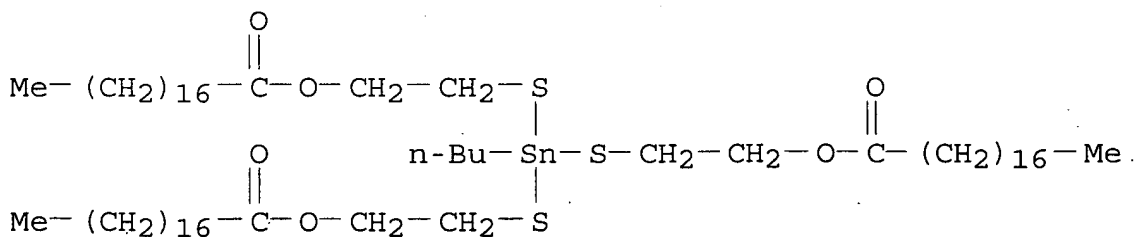
RN 51287-83-3 ZCAPLUS

CN 10-Oxa-4,6-dithia-5-stannadocosanoic acid, 5,5-dibutyl-9-oxo-,
dodecyl ester (9CI) (CA INDEX NAME)

RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

RN 85508-79-8 ZCAPLUS

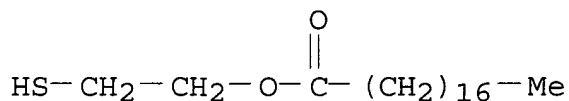
CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

IT 27564-01-8 60642-66-2

(gel-permeation chromatog. of, in characterization of organotin compds. contg. thio-ester groups, for heat stabilizers, for PVC)

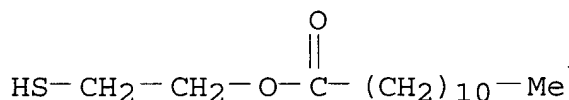
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 60642-66-2 ZCAPLUS

CN Dodecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 1185-81-5 15666-28-1 20004-12-0

25168-24-5 25852-70-4 26401-97-8

28570-24-3 51287-83-3 82530-60-7

85508-79-8

(gel-permeation chromatog. of, for heat stabilizers, for PVC)

IT 27564-01-8 60642-66-2

(gel-permeation chromatog. of, in characterization of organotin compds. contg. thio-ester groups, for heat stabilizers, for PVC)

L48 ANSWER 13 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1985:96513 Document No. 102:96513 Heat stabilizers for halogenated resins. Bohen, Joseph Michael; Reifenberg, Gerald Harvey (Pennwalt Corp., USA). Eur. Pat. Appl. EP 124833 A1 19841114, 24 pp.

DESIGNATED STATES: R: BE, DE, FR, GB, NL. (English). CODEN:

EPXXDW. APPLICATION: EP 1984-104741 19840427. PRIORITY: US

1983-489881 19830429.

AB Halogen-free heat stabilizer compns. for halogenated resins comprise (A) an aliph. mercaptan and (B) .gtoreq.1 S-contg. organotin compd., whereby .ltoreq.80% of the mercaptan can be replaced by an alkali or alk. earth metal salt of a mercaptan or mercapto acid and the A-B wt. ratio is (1-25):(1-20). Thus, PVC [9002-86-2] 100, paraffin wax 1.2, oxidized polyethylene wax 0.15, Ca stearate 0.6, CaCO₃ 2.0, TiO₂ 1.0, and 15:85 methyltin sesquisulfide + 2-mercaptoethyl stearate [27564-01-8] stabilizer 0.5 parts were mixed in a blender, masticated at 370.degree.F and rated visually for discoloration. A resin compn. contg. a binary stabilizer remained white after 15 min of processing, whereas a compn. contg. only 1 of the stabilizers was discolored after 3-12 min..

IT 1185-81-5 22909-87-1 25168-24-5

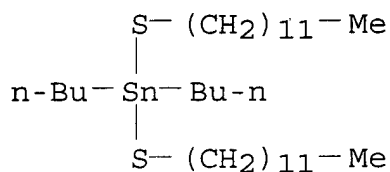
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26761-46-6 27564-01-8 29946-28-9
 30982-97-9 54849-38-6 59118-76-2
 59118-93-3 59138-44-2 68298-40-8
 69128-10-5 95115-32-5 95115-35-8
 95115-37-0 95115-38-1

(heat stabilizers, for halogenated resins)

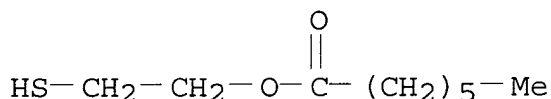
RN 1185-81-5 ZCAPLUS

CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



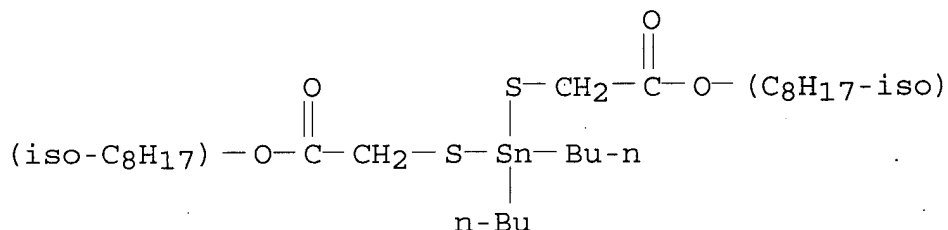
RN 22909-87-1 ZCAPLUS

CN Heptanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



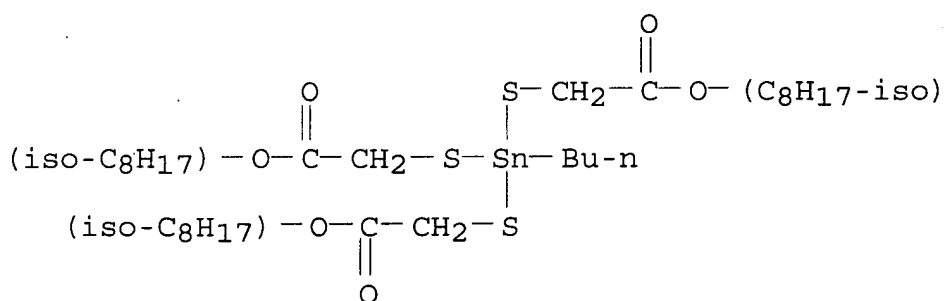
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



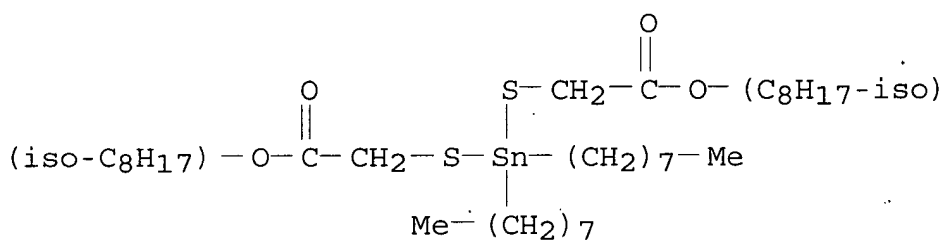
RN 25852-70-4 ZCAPLUS

CN Acetic acid, 2,2',2''-[(butylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



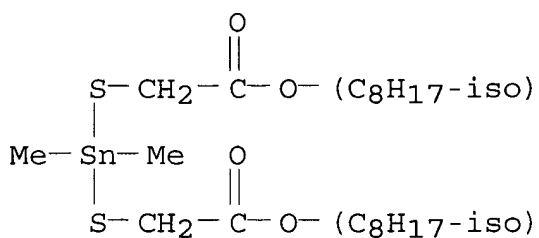
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



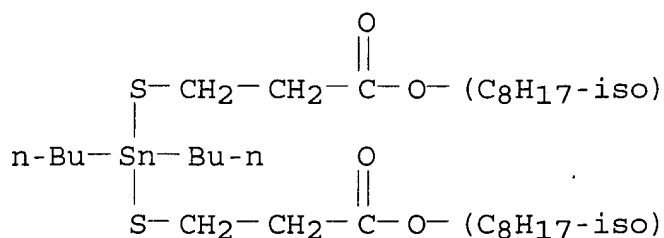
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

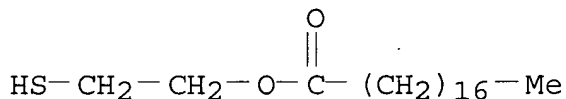


RN 26761-46-6 ZCAPLUS

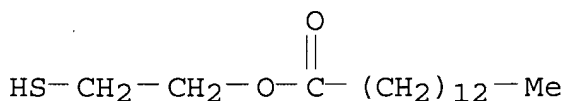
CN Propanoic acid, 3,3'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



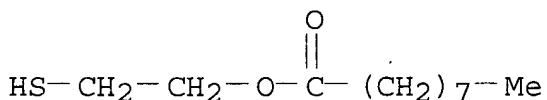
RN 27564-01-8 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



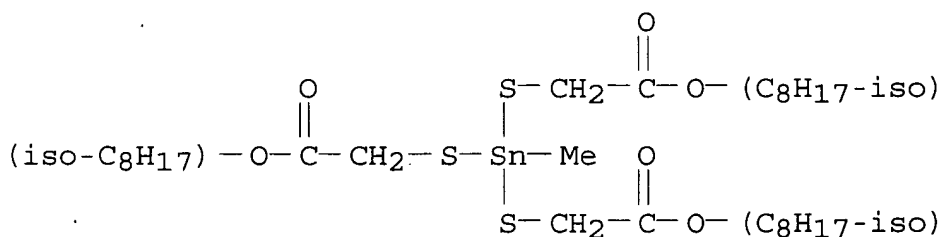
RN 29946-28-9 ZCAPLUS
 CN Tetradecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



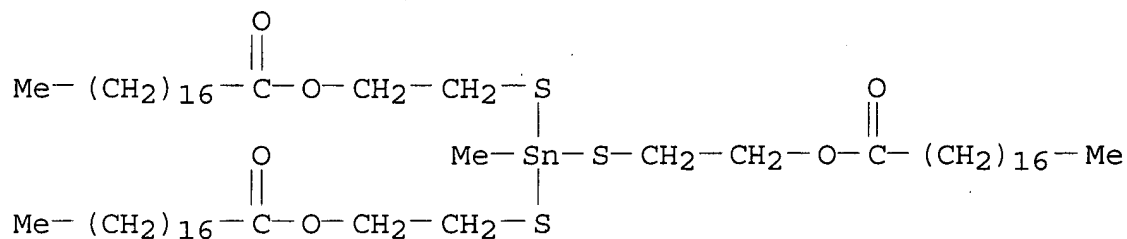
RN 30982-97-9 ZCAPLUS
 CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



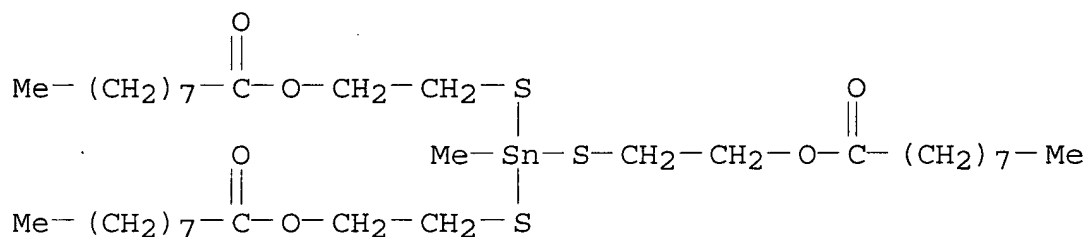
RN 54849-38-6 ZCAPLUS
 CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



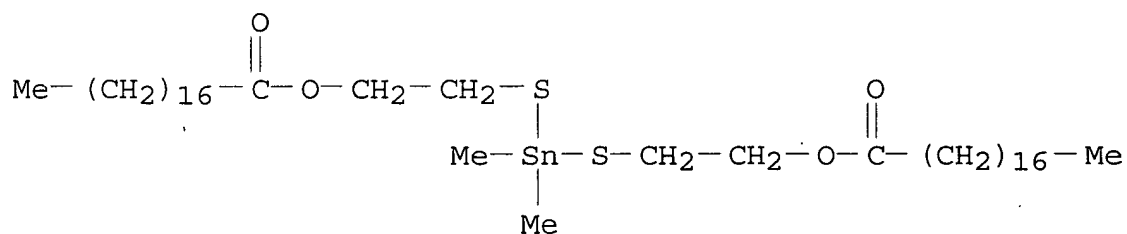
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

RN 59118-93-3 ZCAPLUS

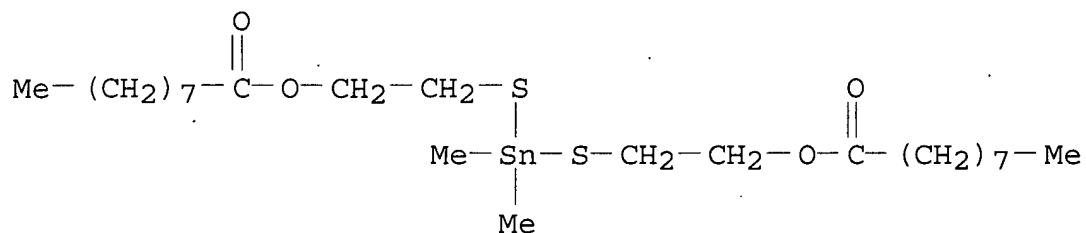
CN Nonanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

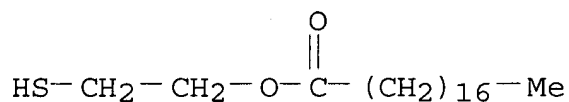
RN 68298-40-8 ZCAPLUS

CN Nonanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



RN 69128-10-5 ZCAPLUS

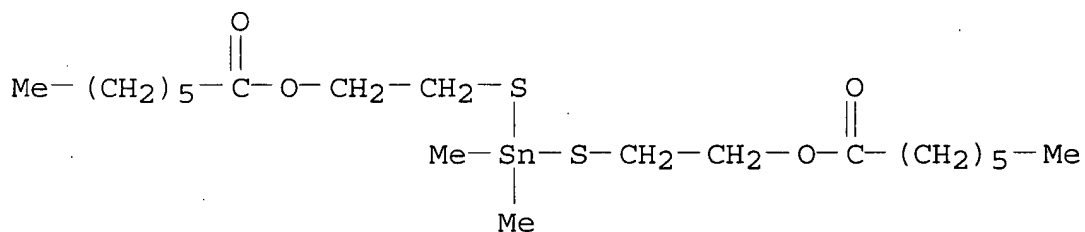
CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

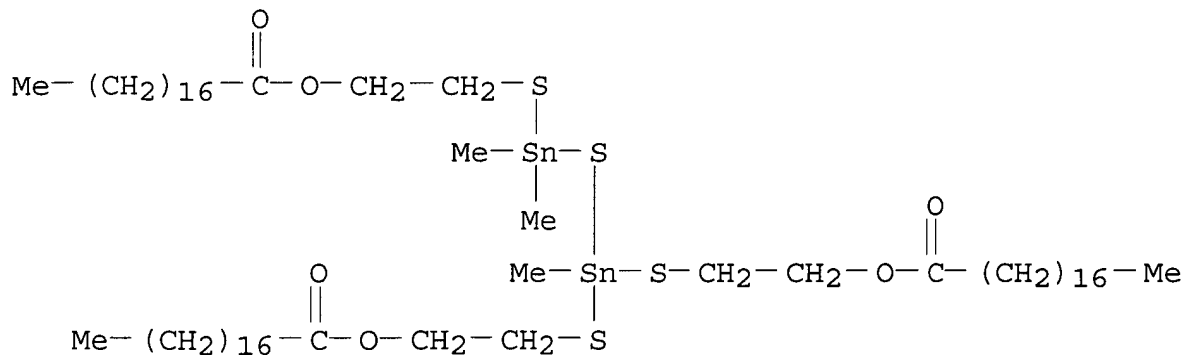
RN 95115-32-5 ZCAPLUS

CN Heptanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



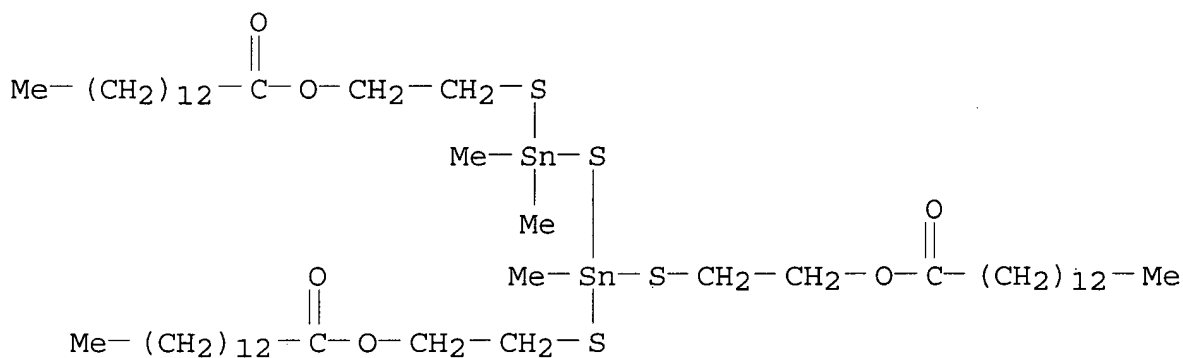
RN 95115-35-8 ZCAPLUS

CN Octadecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



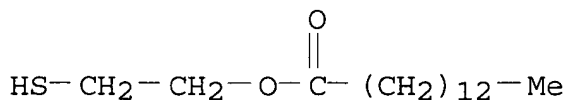
RN 95115-37-0 ZCAPLUS

CN Tetradecanoic acid, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 95115-38-1 ZCAPLUS

CN Tetradecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



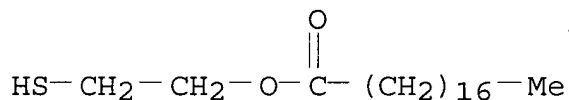
● 1/2 Ba

IT 1185-81-5 22909-87-1 25168-24-5
 25852-70-4 26401-97-8 26636-01-1
 26761-46-6 27564-01-8 29946-28-9
 30982-97-9 54849-38-6 59118-76-2
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69128-10-5 95115-32-5 95115-35-8
95115-37-0 95115-38-1

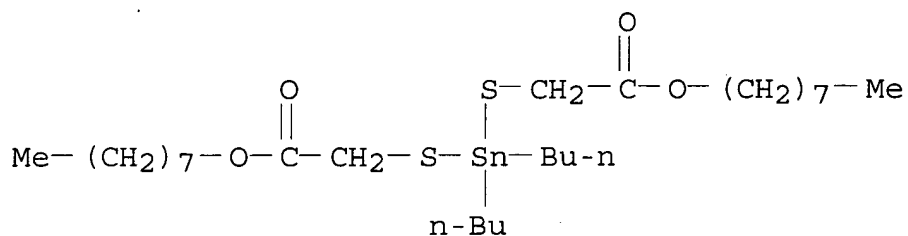
(heat stabilizers, for halogenated resins)

- L48 ANSWER 14 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
1983:406529 Document No. 99:6529 Stabilizer composition. Bohn, Joseph Michael (Pennwalt Corp., USA). Braz. Pedido PI BR 8102789 A 19821214, 40 pp. (Portuguese). CODEN: BPXXDX. APPLICATION: BR 1981-2789 19810506.
- AB A heat stabilizer compn. for PVC [9002-86-2] comprises 1-80% of a Sn tetramercaptide and 20-99% of a S-contg. organotin compd. and may also contain 1-60% alkali metal or alk. earth metal mercaptide and/or 1-60% overbased org. complex. Thus, reaction of 0.4 mol isooctyl mercaptoacetate [25103-09-7] with 0.1 mol SnCl₄ in hexane contg. 0.4 mol Et₃N gave 87% Sn(SCH₂CO₂R)₄ (R = isooctyl) (I) [62568-17-6]. A compounded PVC resin contg. 1.20 phr dimethyltin bis(isooctyl mercaptoacetate) [26636-01-1] and 0.30 phr I remained white for .gtoreq.12 min in a Brabender Plastograph at 213.degree., whereas a similar PVC compn. without the 2 stabilizers turned pink in 3 min and grey in 6 min.
- IT 80233-79-0
(heat stabilizers, for PVC)
- RN 80233-79-0 ZCAPLUS
- CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)

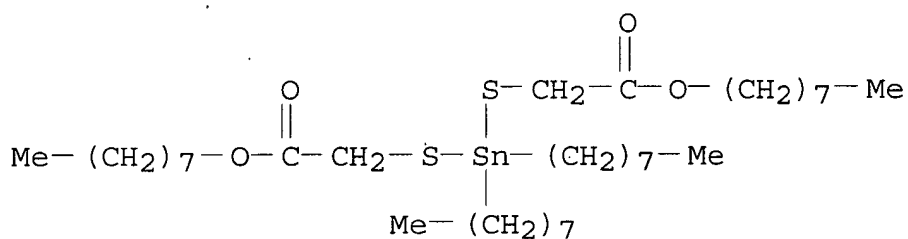


● 1/4 Sn(IV)

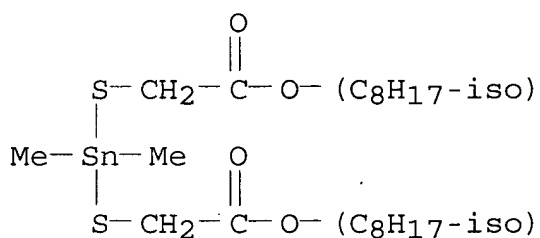
- IT 2781-09-1 22094-92-4 26636-01-1
59118-76-2 59118-79-5 59138-44-2
65291-38-5 65301-46-4 66899-73-8
67361-76-6 67361-77-7 67859-63-6
69128-10-5 82530-60-7 84435-07-4
85508-79-8 85508-82-3 85508-84-5
85508-85-6
(heat stabilizers, with tin tetramercaptides, for PVC)
- RN 2781-09-1 ZCAPLUS
- CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dibutyl-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 22094-92-4 ZCAPLUS

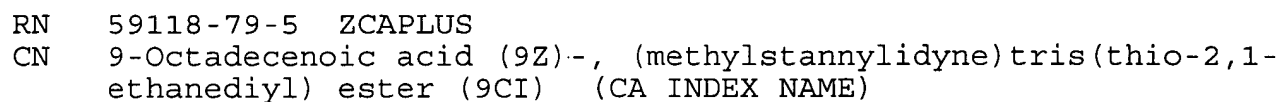
CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dioctyl-7-oxo-,
octyl ester (9CI) (CA INDEX NAME)

RN 26636-01-1 ZCAPLUS

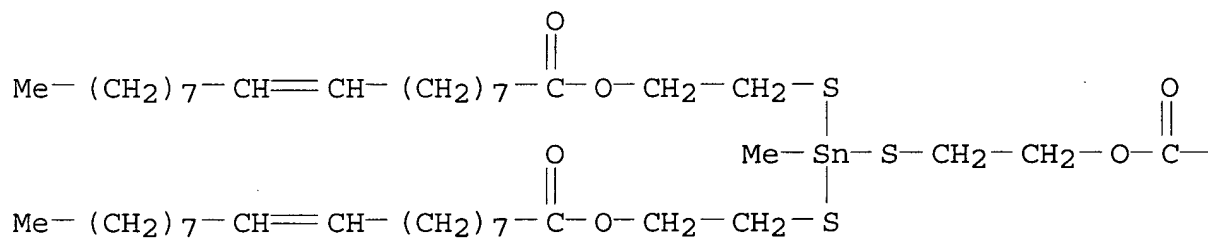
CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl
ester (9CI) (CA INDEX NAME)

RN 59118-76-2 ZCAPLUS

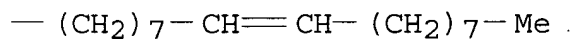
CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



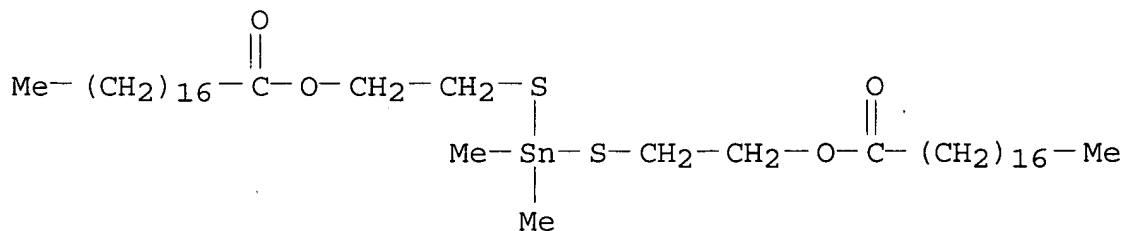
PAGE 1-A



PAGE 1-B

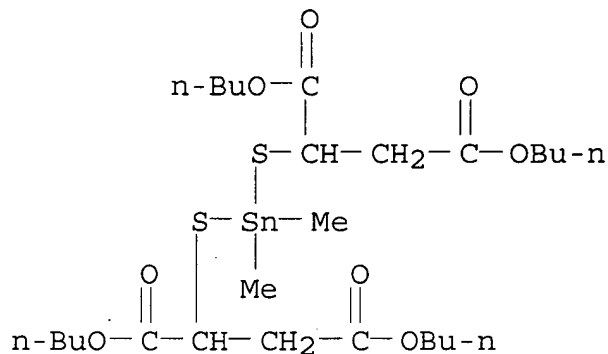


RN	59138-44-2	ZCAPLUS
CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)	



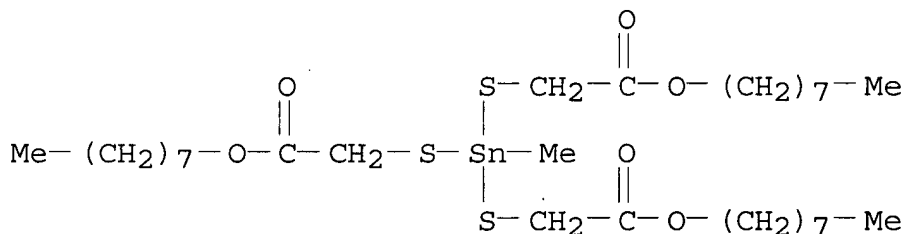
RN 65291-38-5 ZCAPLUS

CN Butanedioic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-,
tetrabutyl ester (9CI) (CA INDEX NAME)



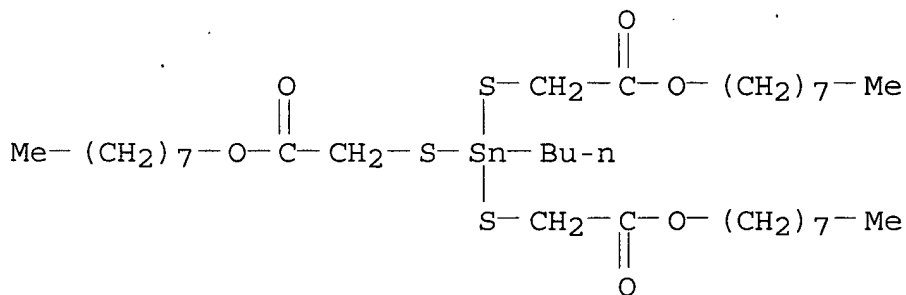
RN 65301-46-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-methyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 66899-73-8 ZCAPLUS

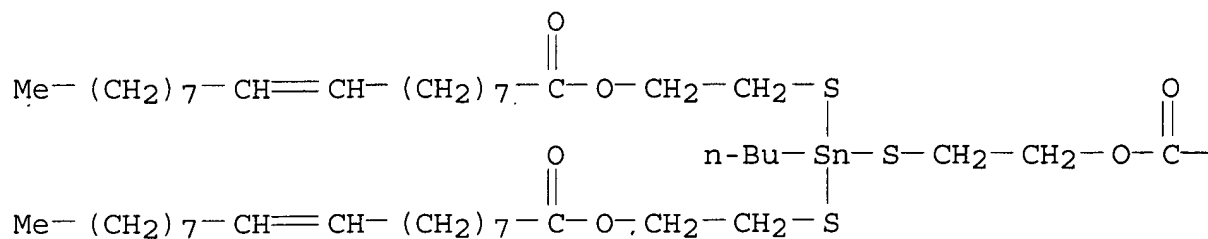
CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-butyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



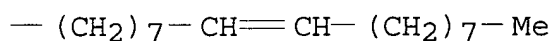
RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-

PAGE 1-A



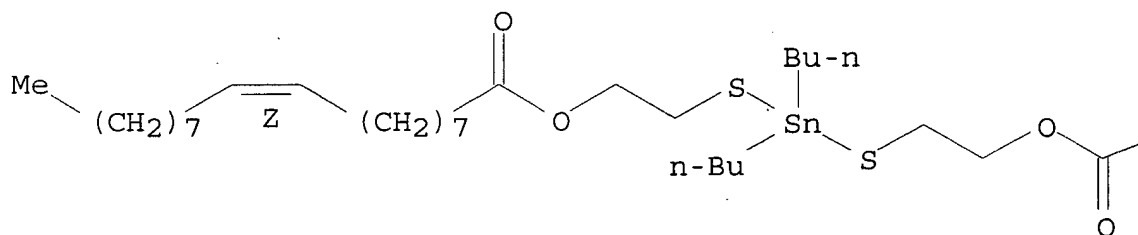
PAGE 1-B



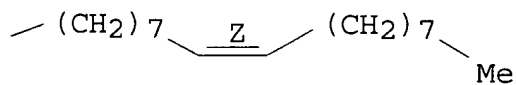
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediy) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

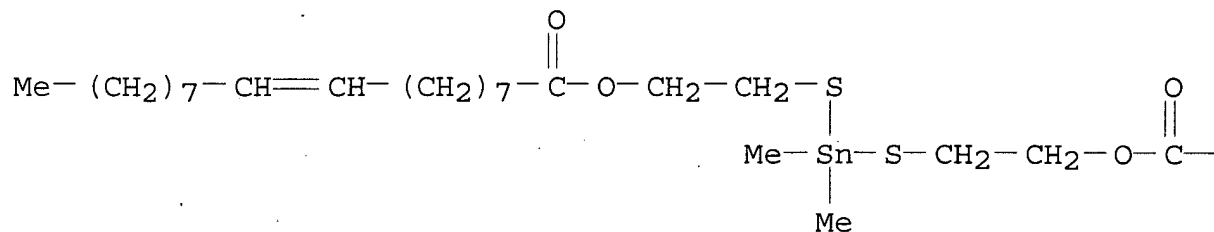


PAGE 1-B

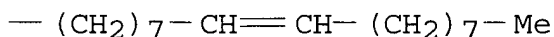


RN 67859-63-6 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

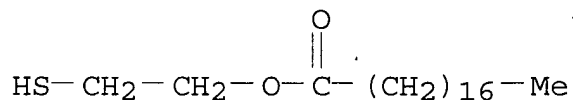
PAGE 1-A



PAGE 1-B

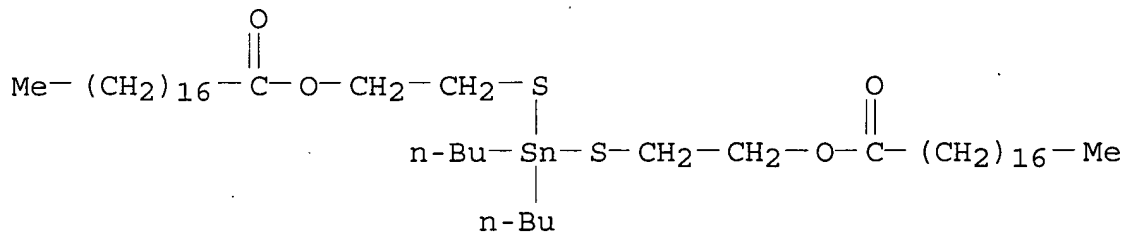


RN 69128-10-5 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



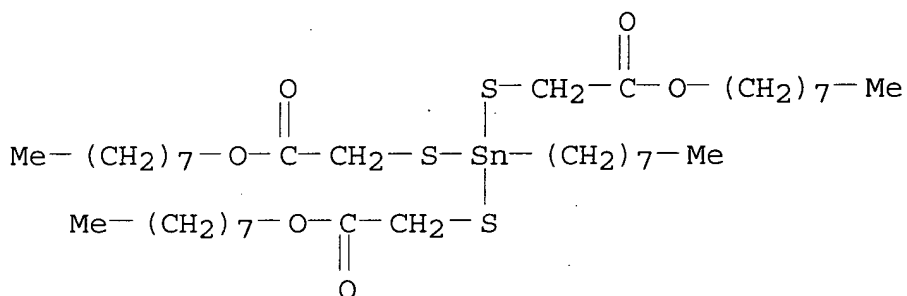
● 1/2 Ba

RN 82530-60-7 ZCAPLUS
 CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



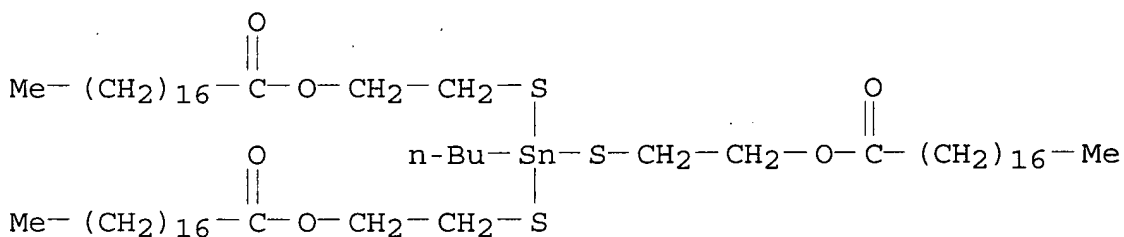
RN 84435-07-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-octyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 85508-79-8 ZCAPLUS

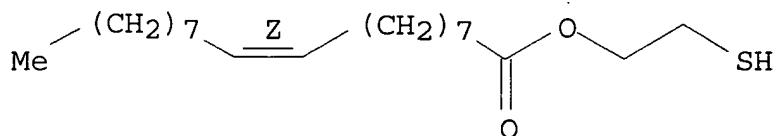
CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)

Double bond geometry as shown.

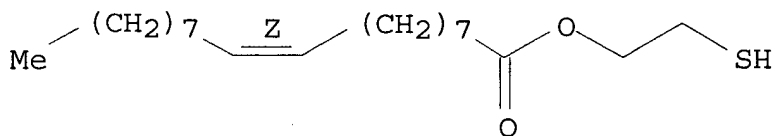


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

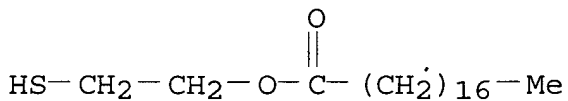
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA
INDEX NAME)

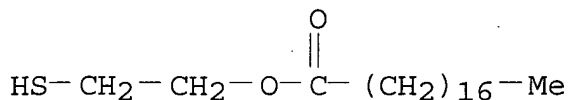
● 1/2 Ca

IT 27564-01-8

(reaction of, with stannic chloride)

RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 80233-79-0

(heat stabilizers, for PVC)

IT 2781-09-1 22094-92-4 26636-01-1
 59118-76-2 59118-79-5 59138-44-2
 65291-38-5 65301-46-4 66899-73-8
 67361-76-6 67361-77-7 67859-63-6
 69128-10-5 82530-60-7 84435-07-4
 85508-79-8 85508-82-3 85508-84-5
 85508-85-6

(heat stabilizers, with tin tetramercaptides, for PVC)

IT 27564-01-8

(reaction of, with stannic chloride)

L48 ANSWER 15 OF .33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:199211 Document No. 98:199211 Stabilizer compositions for polymers. (Carstab Corp., USA). Jpn. Kokai Tokkyo Koho JP 57172958 A2 19821025 Showa, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1982-30432 19820226. PRIORITY: US 1981-238396 19810226; US 1982-345828 19820204.

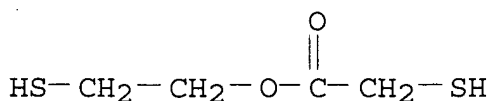
AB Hydroxythiotin compds., SH-contg. org. compds., and optionally organotin compds. are used as heat stabilizers for halogen-contg. polymers. Thus, a compn. of Geon 103EP-F-76 (PVC) [9002-86-2] 100, Ca stearate (I)-coated CaCO₃ 3.0, TiO₂ 1.0, Advawax 165 1.2, I 0.6, AC 629A 0.15, MeSn(SCH₂CH₂OH)(SCH₂CH₂O₂CCl₇H₃₃)₂ [85758-68-5] 0.02, HSCH₂CH₂CO₂C₈H₁₇ [71849-93-9] 0.08, and MeSn(:S)SCH₂CH₂O₂CCl₇H₃₃ [83890-15-7] 0.40 part was rolled at apprx.193.degree., and the color changed from white to tan-orange after 8.5 min.

IT 38705-47-4 59118-78-4 59118-80-8
 59138-44-2 81452-26-8 83890-15-7
 83890-16-8 83890-20-4 85758-43-6
 85758-44-7 85758-45-8 85758-50-5
 85758-52-7 85758-54-9 85758-56-1
 85758-57-2 85758-58-3 85758-60-7
 85758-61-8 85758-62-9 85758-64-1
 85758-65-2 85758-67-4 85758-68-5

(heat stabilizers contg., for PVC)

RN 38705-47-4 ZCAPLUS

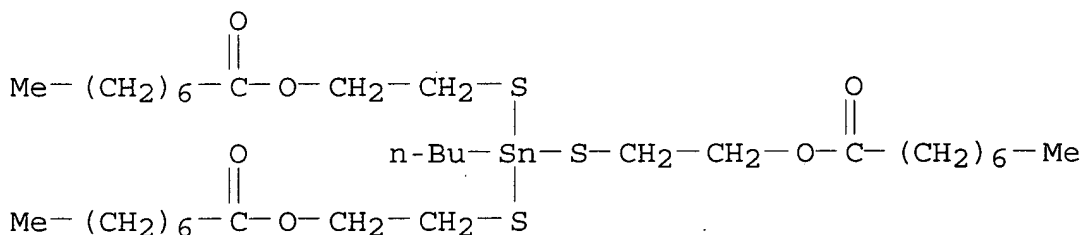
CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



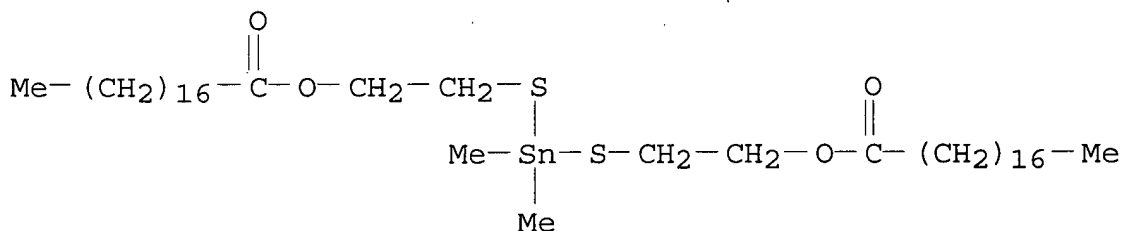
CN	9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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CCCCCCCCC=CCCCCCCCC(=O)OCCS

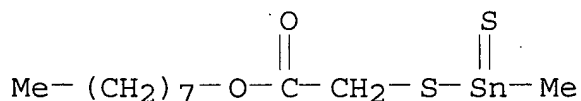
CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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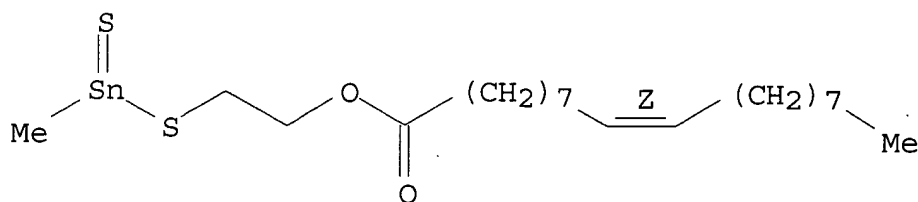
CN	Acetic acid, [(methylthioxostannyl)thio]-, octyl ester (9CI)	(CA
	INDEX NAME)	



RN 83890-15-7 ZCAPLUS

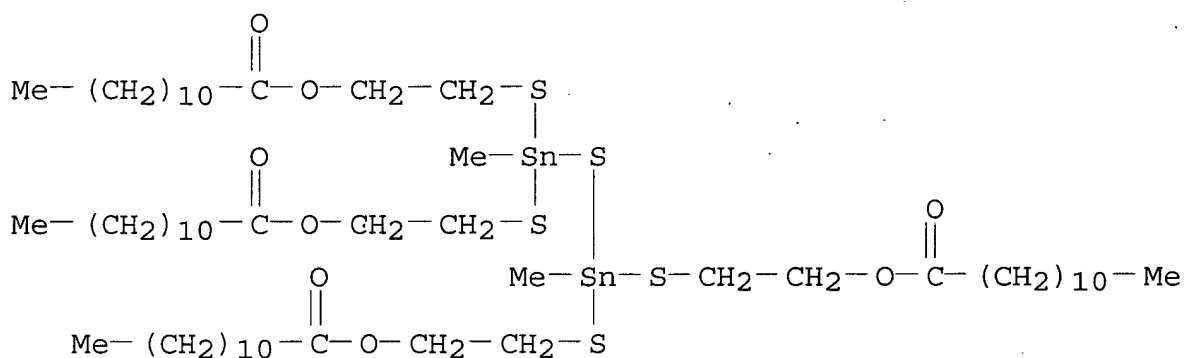
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester
(9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 83890-16-8 ZCAPLUS

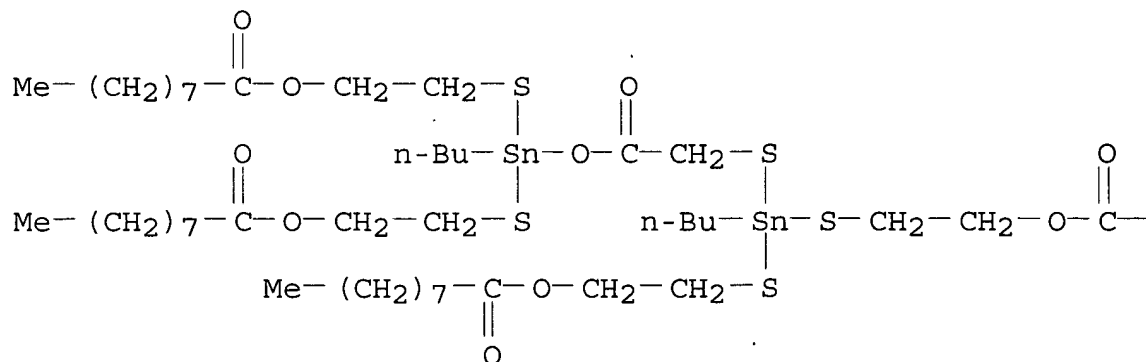
CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-20-4 ZCAPLUS

CN Nonanoic acid, [butyl[[4-butyl-2,9-dioxo-4-[[2-[(1-oxononyl)oxy]ethyl]thio]-3,8-dioxa-5-thia-4-stannaheptadec-1-yl]thio]stannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

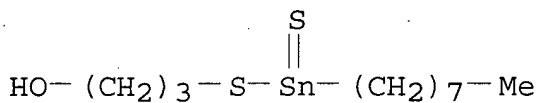


PAGE 1-B

— (CH₂)₇—Me

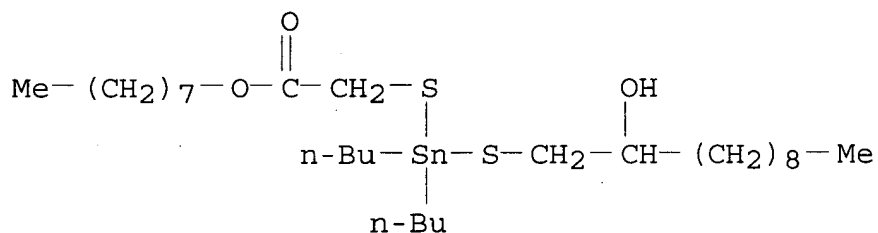
RN 85758-43-6 ZCAPLUS

CN 1-Propanol, 3-[(octylthioxostannyl)thio]- (9CI) (CA INDEX NAME)



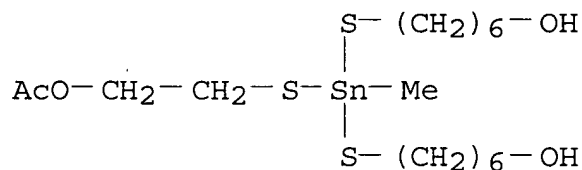
RN 85758-44-7 ZCAPLUS

CN Acetic acid, [[dibutyl[(2-hydroxyundecyl)thio]stannyl]thio]-, octyl ester (9CI) (CA INDEX NAME)



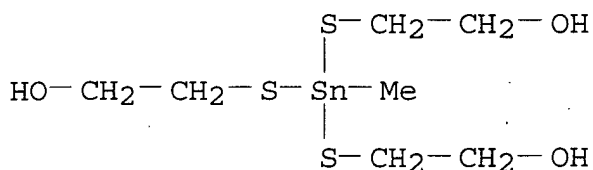
RN 85758-45-8 ZCAPLUS

CN 3-Oxa-6,8-dithia-7-stannatetradecan-14-ol, 7-[(6-hydroxyhexyl)thio]-7-methyl-2-oxo- (9CI) (CA INDEX NAME)



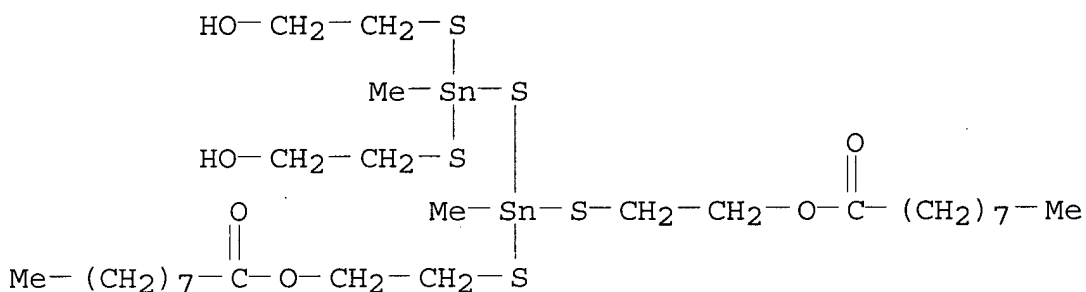
RN 85758-50-5 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris- (9CI) (CA INDEX NAME)



RN 85758-52-7 ZCAPLUS

CN Nonanoic acid, [3,3-bis[(2-hydroxyethyl)thio]-1,3-dimethyldistannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

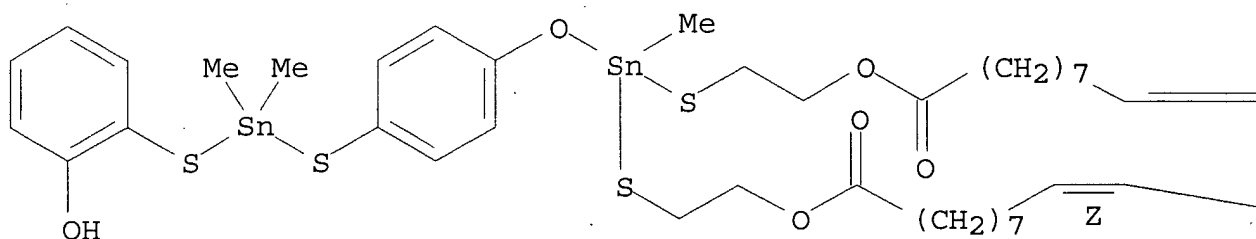


RN 85758-54-9 ZCAPLUS

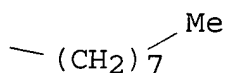
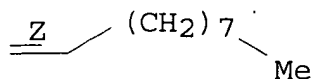
CN 9-Octadecenoic acid (9Z)-, [[4-[[[(2-hydroxyphenyl)thio]dimethylstannyl]thio]phenoxy]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



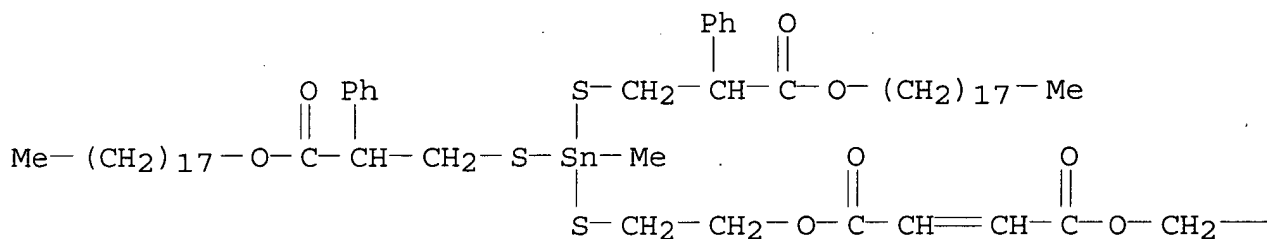
PAGE 1-B



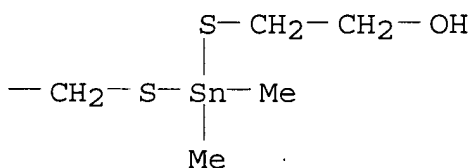
RN 85758-56-1 ZCAPLUS

CN 9-Oxa-4,6-dithia-5-stannatridec-11-enedioic acid,
 5-methyl-5-[[3-(octadecyloxy)-3-oxo-2-phenylpropyl]thio]-10-oxo-2-phenyl-, 13-[2-[[[(2-hydroxyethyl)thio]dimethylstannyl]thio]ethyl] 1-octadecyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

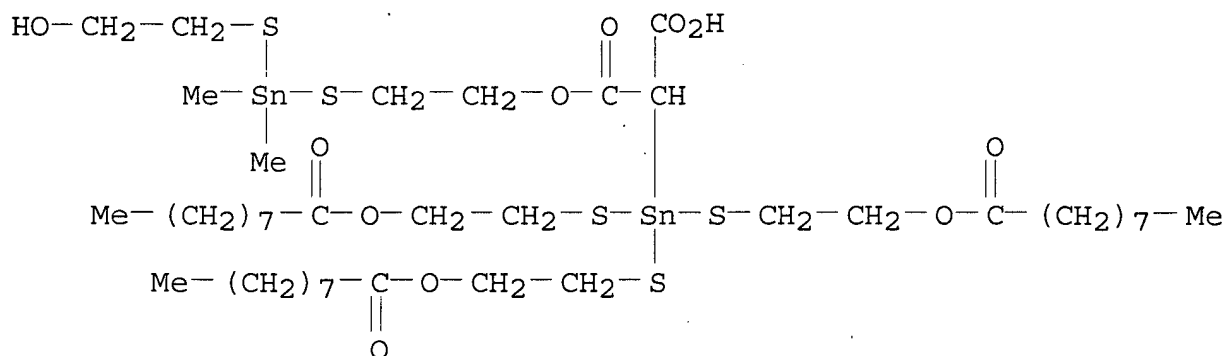


PAGE 1-B

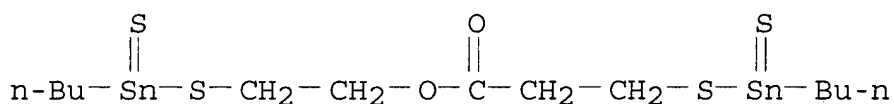


RN 85758-57-2 ZCAPLUS

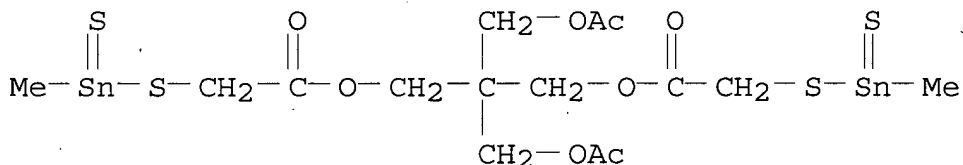
CN Propanedioic acid, [tris[[2-[(1-oxononyl)oxy]ethyl]thio]stannyl]-, mono[2-[[[(2-hydroxyethyl)thio]dimethylstannyl]thio]ethyl] ester (9CI) (CA INDEX NAME)



RN 85758-58-3 ZCAPLUS

CN Propanoic acid, 3-[(butylthioxostannyl)thio]-, 2-
[(butylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

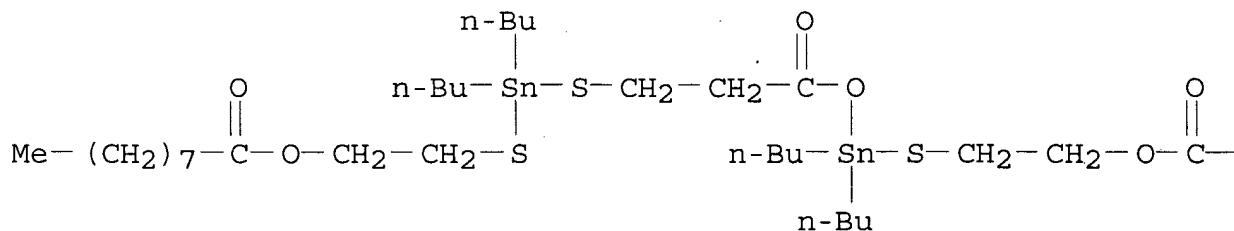
RN 85758-60-7 ZCAPLUS

CN Acetic acid, [(methylthioxostannyl)thio]-, 2,2-
bis[(acetyloxy)methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)

RN 85758-61-8 ZCAPLUS

CN Nonanoic acid, 4,4-dibutyl-6-oxo-5-oxa-3,9,11-trithia-4,10-
distannatridecane-1,13-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



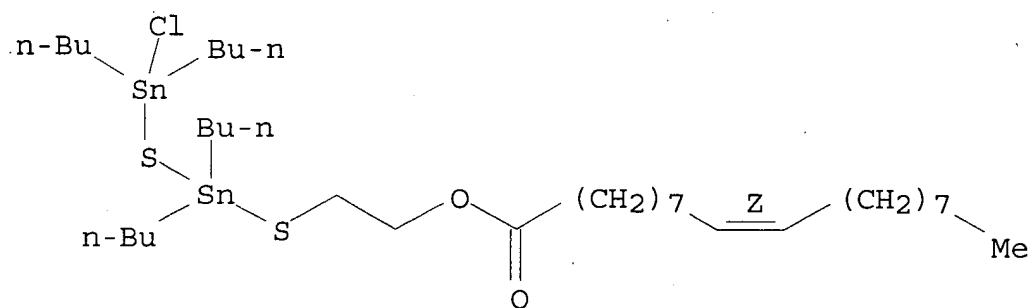
PAGE 1-B

— (CH₂)₇—Me

RN 85758-62-9 ZCAPLUS

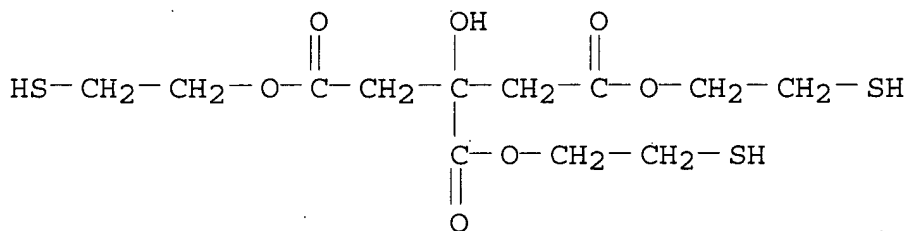
CN 9-Octadecenoic acid (9Z)-, 2-[(1,1,3,3-tetrabutyl-3-chlorodistannathianyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



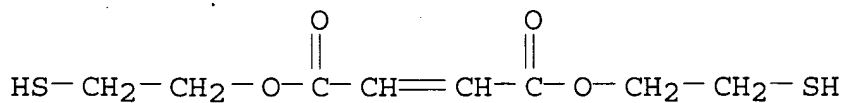
RN 85758-64-1 ZCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, tris(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



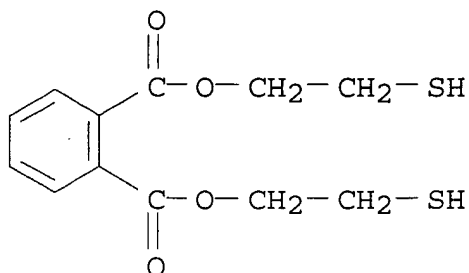
RN 85758-65-2 ZCAPLUS

CN 2-Butenedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 85758-67-4 ZCAPLUS

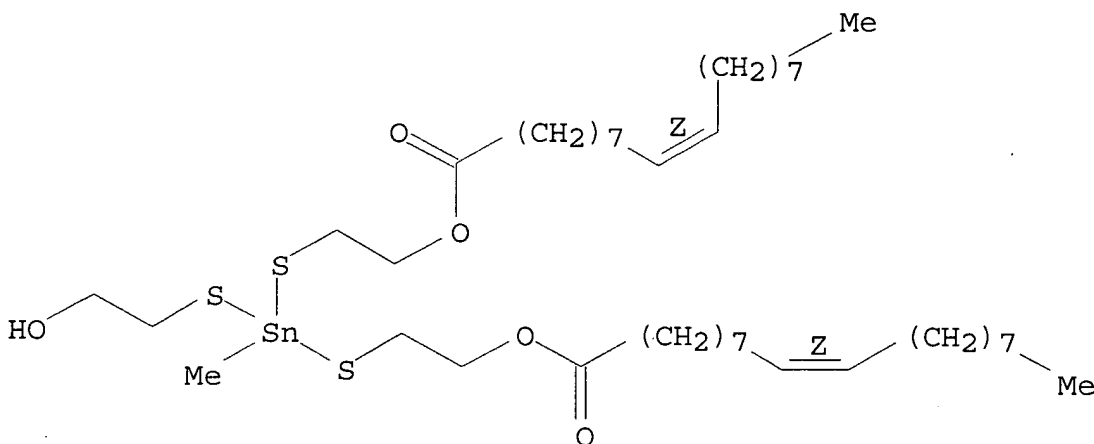
CN 1,2-Benzenedicarboxylic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 85758-68-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, [[(2-hydroxyethyl)thio]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

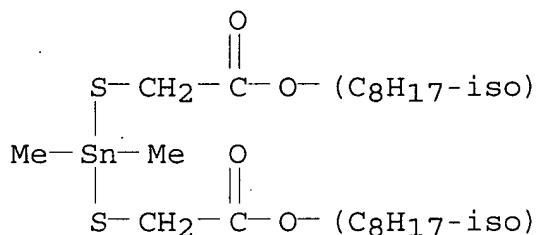
Double bond geometry as shown.



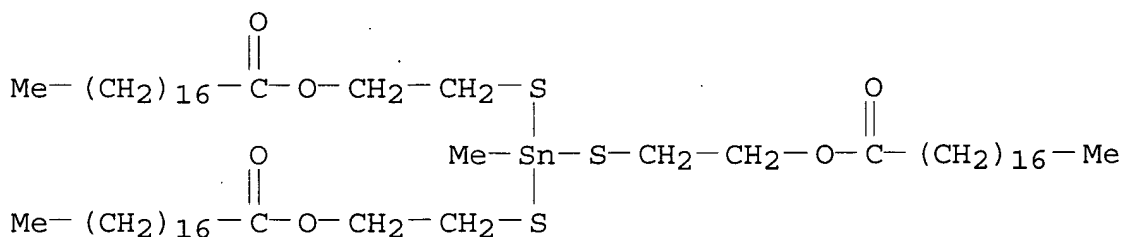
IT 38705-47-4 59118-78-4 59118-80-8
 59138-44-2 81452-26-8 83890-15-7
 83890-16-8 83890-20-4 85758-43-6
 85758-44-7 85758-45-8 85758-50-5
 85758-52-7 85758-54-9 85758-56-1
 85758-57-2 85758-58-3 85758-60-7
 85758-61-8 85758-62-9 85758-64-1
 85758-65-2 85758-67-4 85758-68-5
 (heat stabilizers contg., for PVC)

L48 ANSWER 16 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1983:199204 Document No. 98:199204 Stabilizer for halogenated resins.
 (Pennwalt Corp. , USA). Neth. Appl. NL 8101857 A 19821101, 26 pp.
 (Dutch). CODEN: NAXXAN. APPLICATION: NL 1981-1857 19810415.

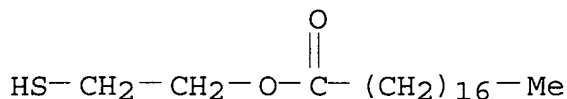
- AB A heat stabilizer for preventing discoloration of halogenated resins, esp. vinyl chloride resins, consists of a S-contg. organotin compd., a tin tetrakis mercaptide, an alkali or alk. earth metal salt of a mercaptan or mercapto acid, and an overbased org. complex based on an alkali for alk. earth metal base. Thus, to 100 wt. parts poly(vinyl chloride) [9002-86-2] contg. the usual additives were added methyltin tris(2-mercaptoethyl stearate) [59118-76-2] 1.10, an overbased BaCO₃ org. complex (prepd. with p-nonylphenol) 0.10 barium bis(2-mercaptoethyl stearate) [513-77-9] 0.15, and tin tetrakis(2-mercapoethyl stearate) [62568-17-6] 0.15 part in a blender. The resulting plastic did not change its white color for 15 min at 213.degree..
- IT 26636-01-1 59118-76-2 69128-10-5
(heat stabilizers, contg. barium carbonate overbased complex, for PVC)
- RN 26636-01-1 ZCAPLUS
- CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



- RN 59118-76-2 ZCAPLUS
- CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



- RN 69128-10-5 ZCAPLUS
- CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 26636-01-1 59118-76-2 69128-10-5
(heat stabilizers, contg. barium carbonate overbased complex, for PVC)

L48 ANSWER 17 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
1983:180439 Document No. 98:180439 Heat stabilizers for poly(vinyl
chloride). (Pennwalt Corp., USA). Jpn. Kokai Tokkyo Koho JP
57174332 A2 19821027 Showa, 11 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1981-57235 19810417.

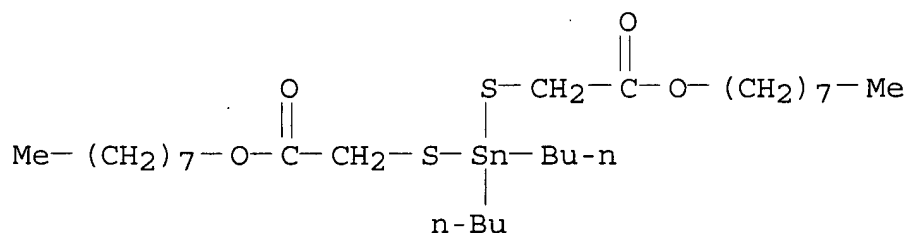
AB Heat-resistant PVC [9002-86-2] compns. contain 20-99:1-80 mixt. of a -CSnS- group-contg. compd. and a Sn tetramercaptide-type compd. and optionally alkali or alk. earth metal salts with mercaptans or mercaptocarboxylic acids and/or basic alkali or alk. earth metal salt org. complexes. For example, a compn. from PVC 100, K-120N (acrylic polymer) 3.0, paraffin wax 0.5, partially saponif. ester wax 0.2, Ca stearate 1.4, TiO₂ 2.0, dimethyltin bis(isooctyl thioglycolate) [26636-01-1] 1.20, and tin tetrakis(isooctyl thioglycolate) [62568-17-6] 0.30 part had yellowing resistance (at 415.degree.F) > 12 min.

IT 2781-09-1 20004-13-1 22094-92-4
26636-01-1 59118-76-2 59118-79-5
59138-44-2 65291-38-5 65301-46-4
66899-73-8 67361-76-6 67361-77-7
67859-63-6 69128-10-5 80233-79-0
82530-60-7 84435-07-4 85490-98-8
85508-79-8 85508-82-3 85508-84-5
85508-85-6

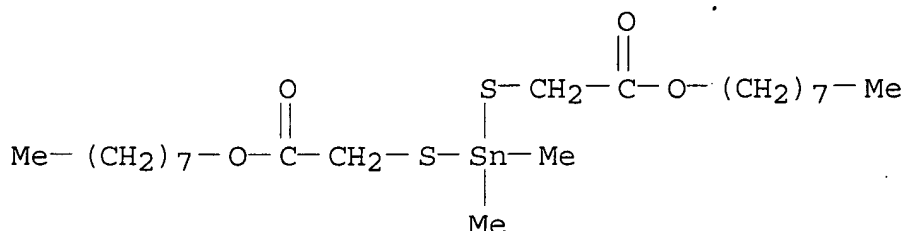
(heat stabilizers contg., for PVC)

RN 2781-09-1 ZCAPLUS

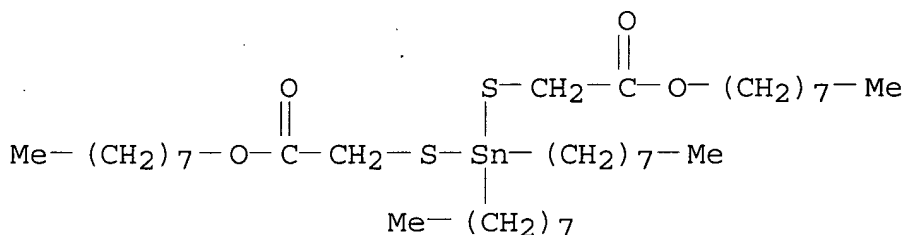
CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dibutyl-7-oxo-,
octyl ester (9CI) (CA INDEX NAME)



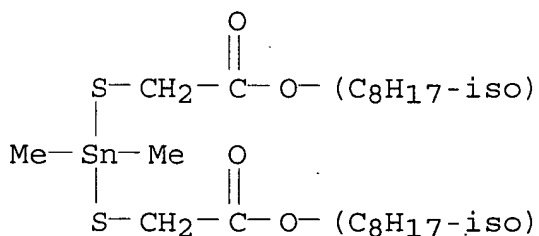
RN 20004-13-1 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-dimethyl-7-oxo-,
octyl ester (9CI) (CA INDEX NAME)

RN 22094-92-4 ZCAPLUS

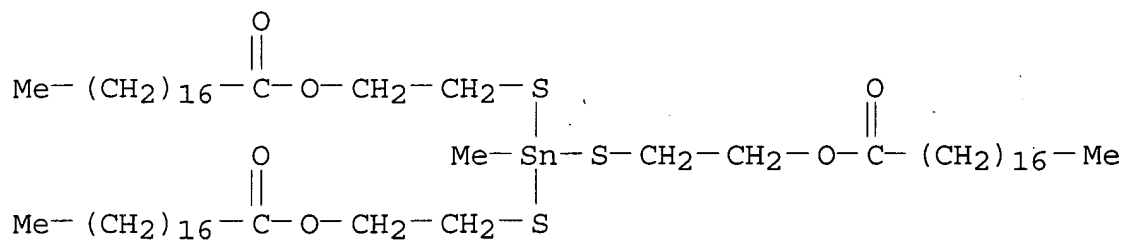
CN 8-Oxa-3,5-dithia-4-stannahexadecanoic acid, 4,4-diioctyl-7-oxo-,
octyl ester (9CI) (CA INDEX NAME)

RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diioctyl
ester (9CI) (CA INDEX NAME)

RN 59118-76-2 ZCAPLUS

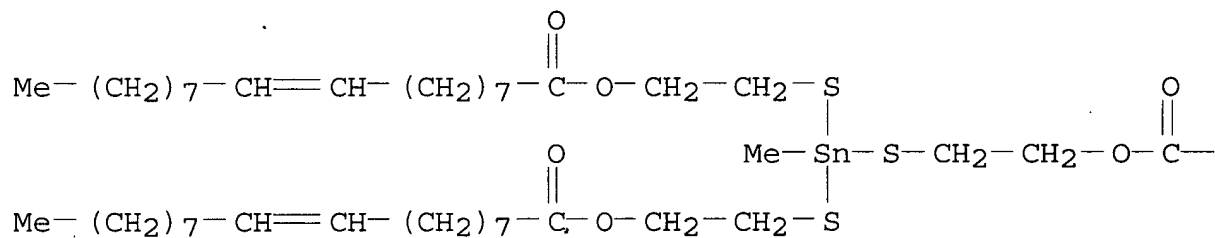
CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)



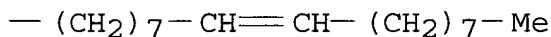
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

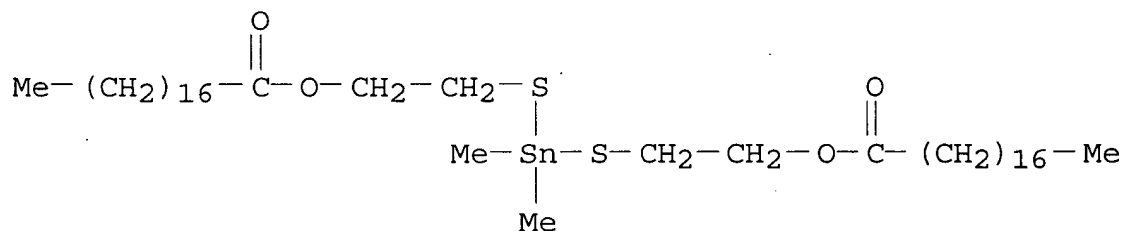


PAGE 1-B



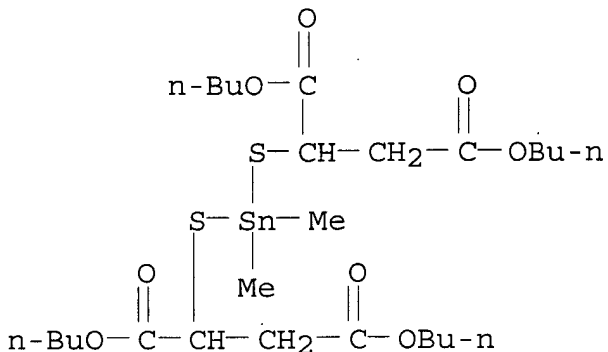
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



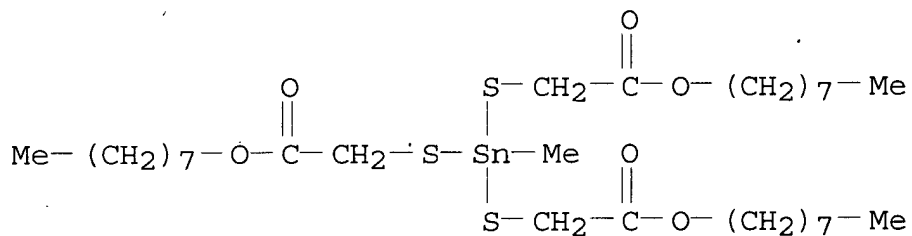
RN 65291-38-5 ZCAPLUS

CN Butanedioic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-,
tetrabutyl ester (9CI) (CA INDEX NAME)



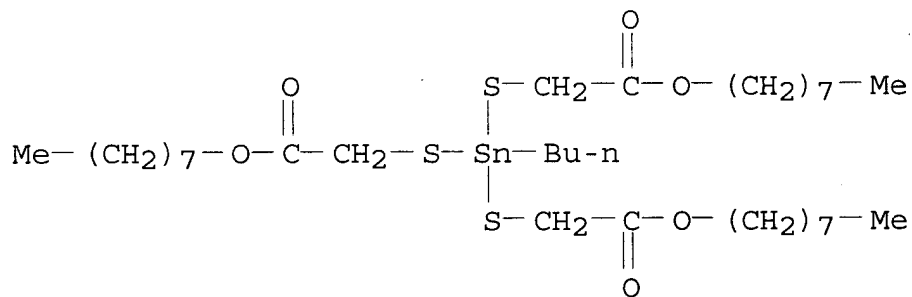
RN 65301-46-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-methyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 66899-73-8 ZCAPLUS

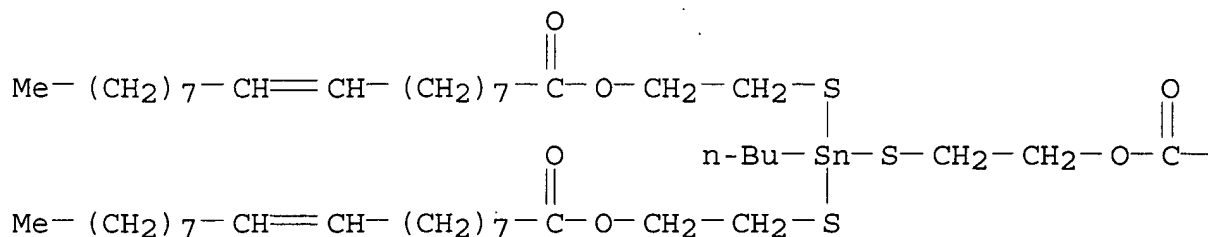
CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-butyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



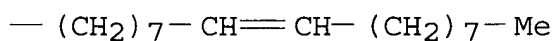
RN 67361-76-6 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-

PAGE 1-A



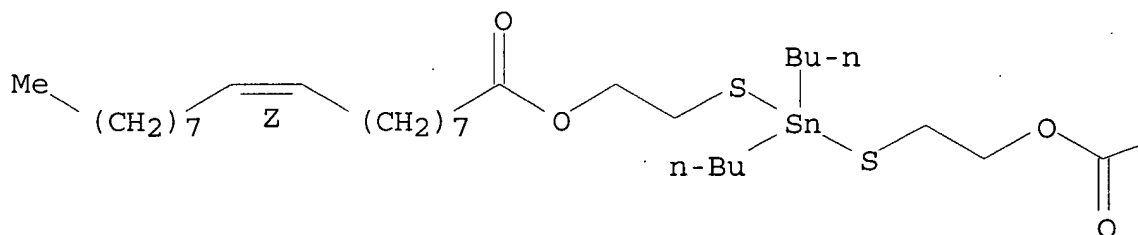
PAGE 1-B



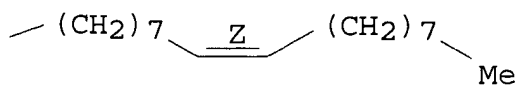
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediy) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

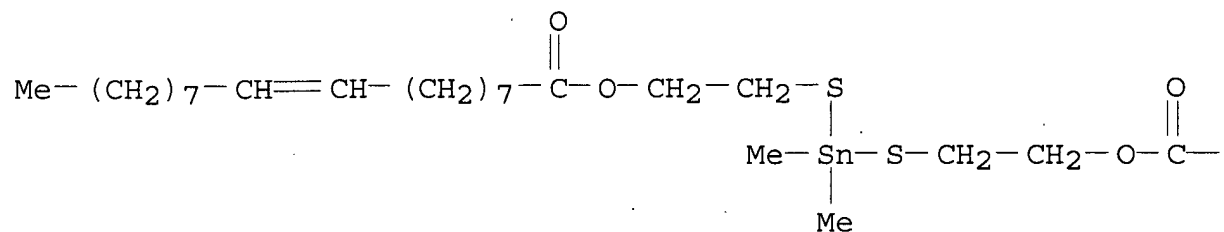


PAGE 1-B

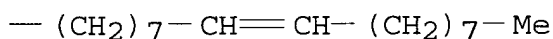


RN 67859-63-6 ZCAPLUS
 CN 9-Octadecenoic acid (9Z)-, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

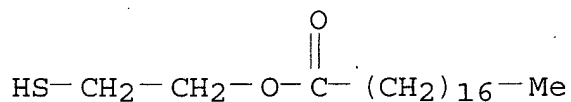
PAGE 1-A



PAGE 1-B

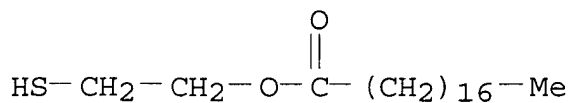


RN 69128-10-5 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

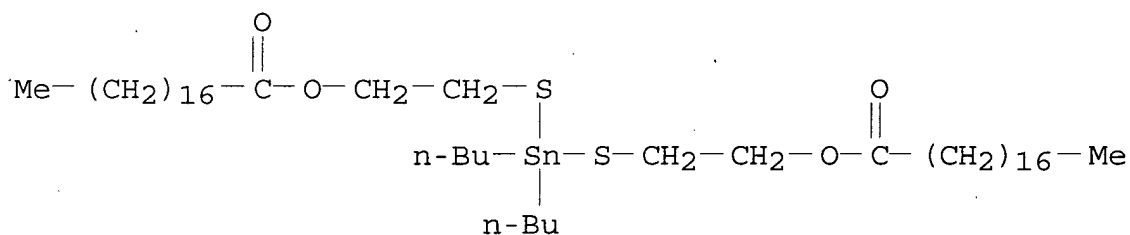
RN 80233-79-0 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



● 1/4 Sn(IV)

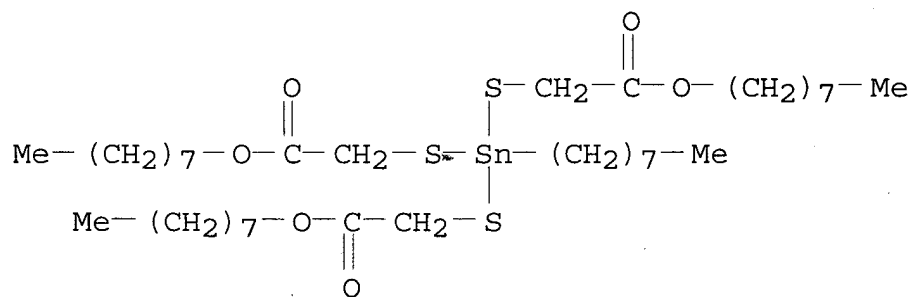
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 84435-07-4 ZCAPLUS

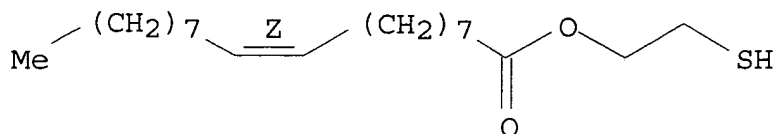
CN 8-Oxa-3,5-dithia-4-stannahehexadecanoic acid, 4-octyl-4-[[2-(octyloxy)-2-oxoethyl]thio]-7-oxo-, octyl ester (9CI) (CA INDEX NAME)



RN 85490-98-8 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)

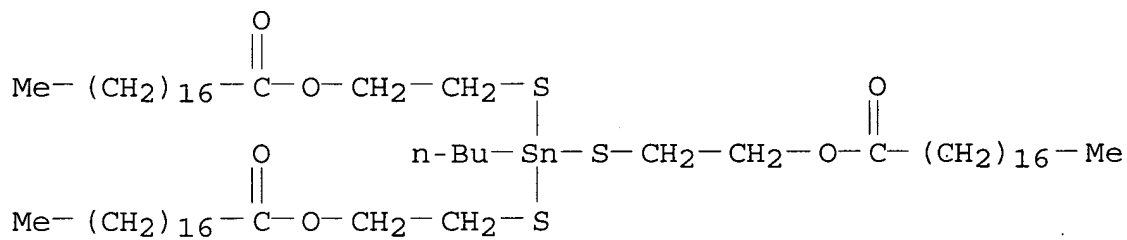
Double bond geometry as shown.



● 1/4 Sn(IV)

RN 85508-79-8 ZCAPLUS

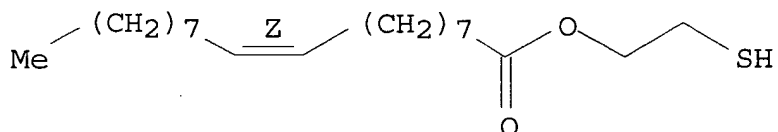
CN Octadecanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 85508-82-3 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, barium salt (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

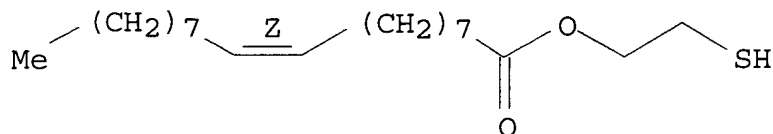


● 1/2 Ba

RN 85508-84-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester, calcium salt (9CI)
(CA INDEX NAME)

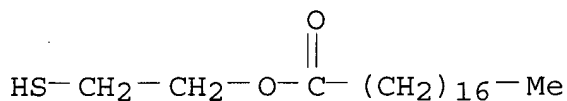
Double bond geometry as shown.



● 1/2 Ca

RN 85508-85-6 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, calcium salt (9CI) (CA INDEX NAME)



● 1/2 Ca

IT 2781-09-1 20004-13-1 22094-92-4
 26636-01-1 59118-76-2 59118-79-5
 59138-44-2 65291-38-5 65301-46-4
 66899-73-8 67361-76-6 67361-77-7
 67859-63-6 69128-10-5 80233-79-0
 82530-60-7 84435-07-4 85490-98-8
 85508-79-8 85508-82-3 85508-84-5
 85508-85-6

(heat stabilizers contg., for PVC)

L48 ANSWER 18 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

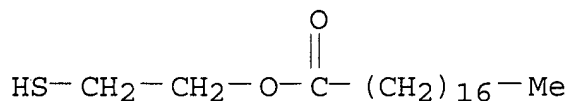
1983:5118 Document No. 98:5118 Polymer stabilizing compositions.
 Bresser, Robert E.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59614 A1 19820908, 75 pp.
 DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE.
 (English). CODEN: EPXXDW. APPLICATION: EP 1982-300980 19820225.
 PRIORITY: US 1981-238298 19810226; US 1982-345830 19820204.

AB Effective heat stabilizers for polymers comprise .gtoreq.1 monoorganotin compd., .gtoreq.1 mercaptan, and optionally .gtoreq.1 diorganotin compd. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, Ca stearate 0.60, paraffin wax 1.2, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, and octyl 3-mercaptopropionate [71849-93-9] 0.08 part were dry blended at 110.degree.. The mixt. was then roll milled at 193.degree., the color turning from white to

IT	27564-01-8	59118-78-4	59118-80-8
	59138-44-2	83890-15-7	83890-16-8
	83890-17-9		

RN 27564-01-8 ZCAPLUS

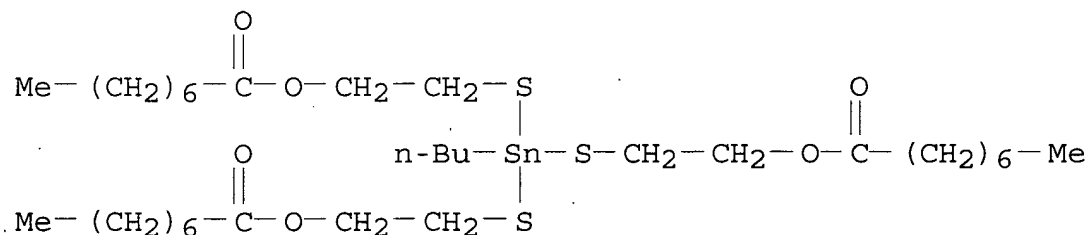
CN	Octadecanoic acid, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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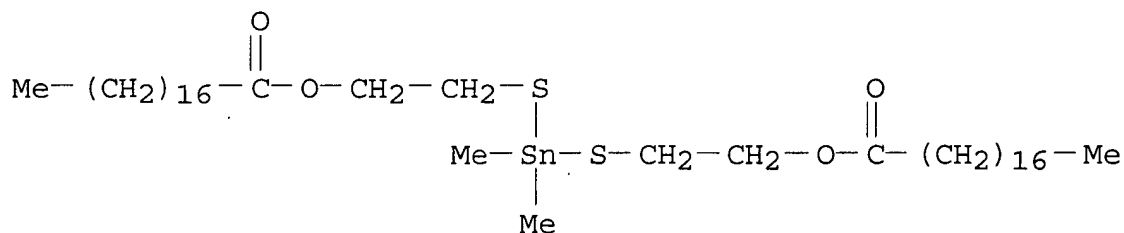
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

$$\text{Me}-(\text{CH}_2)_7-\text{Z}-(\text{CH}_2)_7-\text{C}(=\text{O})\text{OCH}_2\text{CH}_2\text{SH}$$

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



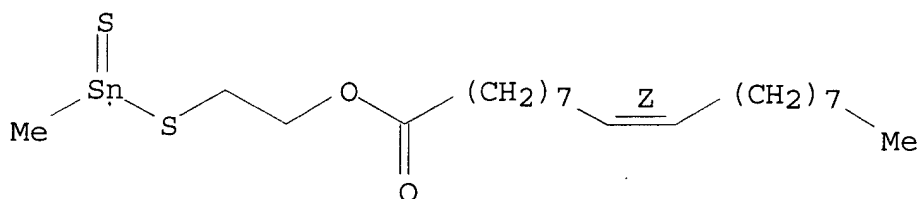
CN	Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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RN 83890-15-7 ZCAPLUS

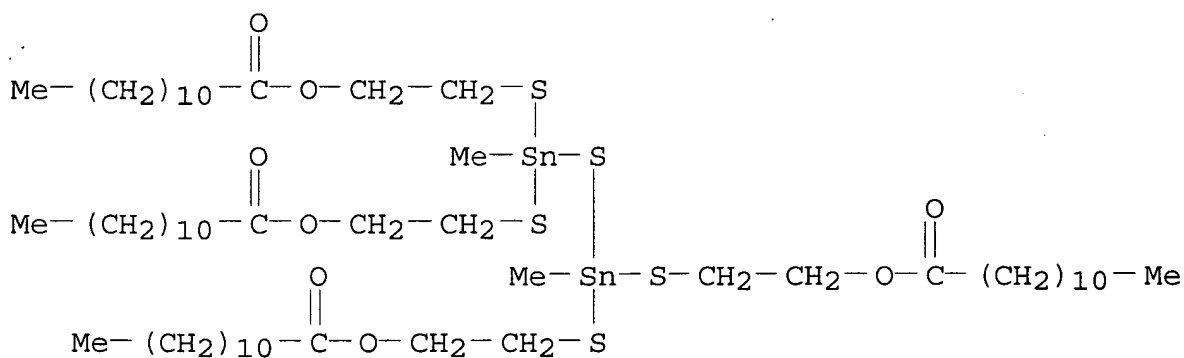
CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



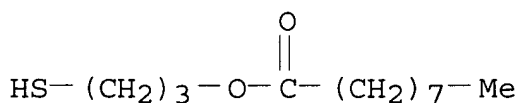
RN 83890-16-8 ZCAPLUS

CN Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 83890-17-9 ZCAPLUS

CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



IT 27564-01-8 59118-78-4 59118-80-8

59138-44-2 83890-15-7 83890-16-8
83890-17-9

(heat stabilizer compns. contg., for PVC)

L48 ANSWER 19 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1983:5117 Document No. 98:5117 Polymer stabilizing compositions and their use. Kugele, Thomas G.; Mesch, Keith A.; Wursthorn, Karl R. (Carstab Corp., USA). Eur. Pat. Appl. EP 59615 A1 19820908, 55 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1982-300981 19820225. PRIORITY: US 1981-238299 19810226; US 1982-345821 19820204.

AB Heat stabilizer compns. for polymers comprise .gtoreq.1 organotin compd. 40-90, .gtoreq.1 mercaptan 10-60, and .gtoreq.1 halostannane 0-33%. Thus, PVC [9002-86-2] 100.0, Ca stearate-coated CaCO₃ 3.0, TiO₂ 1.0, paraffin wax 1.2, Ca stearate 0.60, oxidized polyethylene 0.15, 2-(methylthioxostannyl)ethyl oleate [83890-15-7] 0.40, octyl 3-mercaptopropionate [71849-93-9] 0.08, and methyltin trichloride [993-16-8] 0.01 part were dry blended at 110.degree.. The compn. was then roll milled at 193.degree., requiring 6 min for a color change from white to tan-orange.

IT 5862-40-8 10194-00-0 27564-01-8

59118-78-4 59118-80-8 59138-44-2

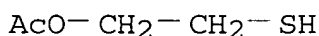
83890-15-7 83890-16-8 83890-17-9

83890-18-0 83890-20-4 83899-94-9

(heat stabilizer compns. contg., for PVC)

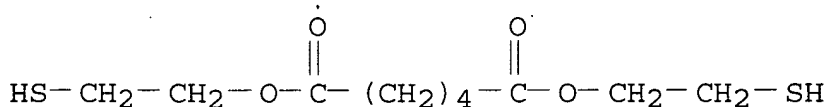
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



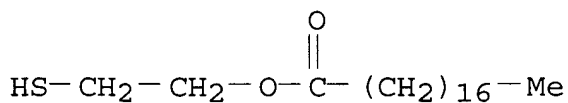
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

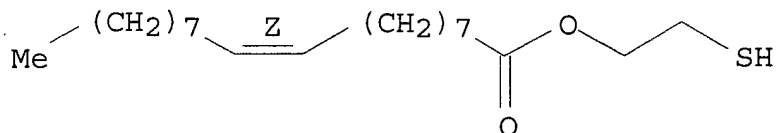


RN 59118-78-4 ZCAPLUS

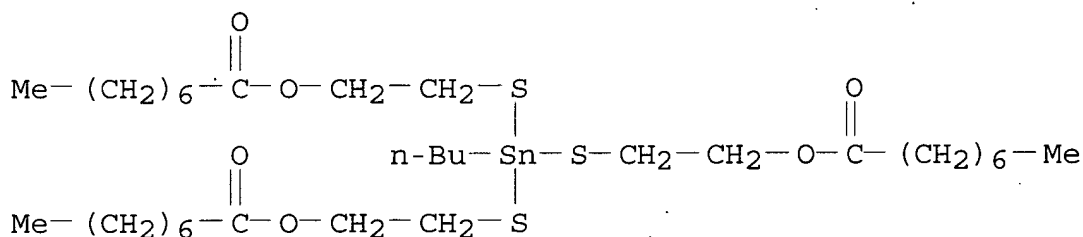
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX

NAME)

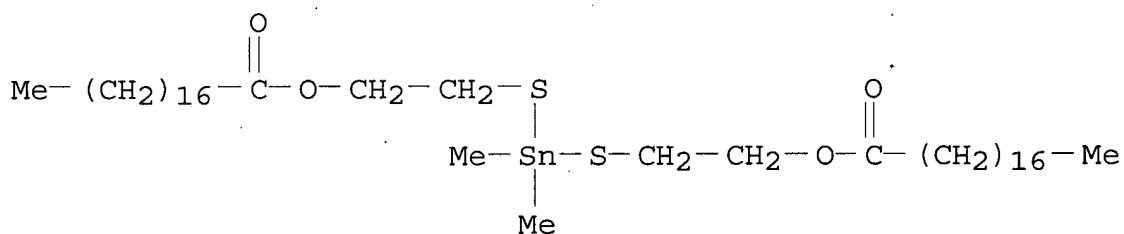
Double bond geometry as shown.



RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

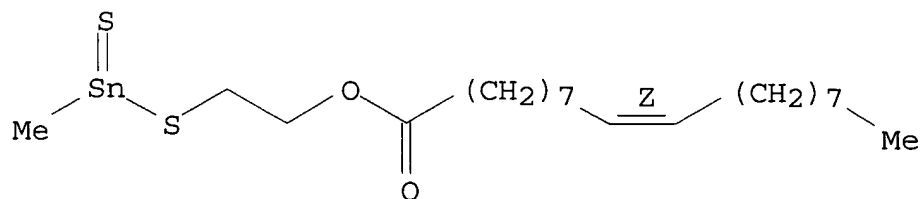
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

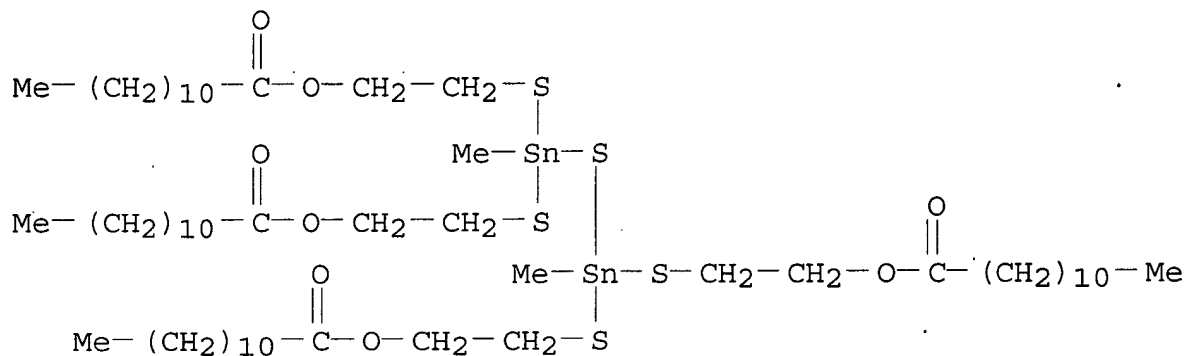
RN 83890-15-7 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-[(methylthioxostannyl)thio]ethyl ester
(9CI) (CA INDEX NAME)

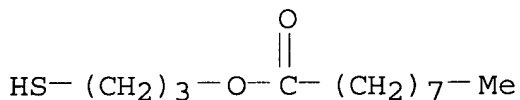
Double bond geometry as shown.



CN	Dodecanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)
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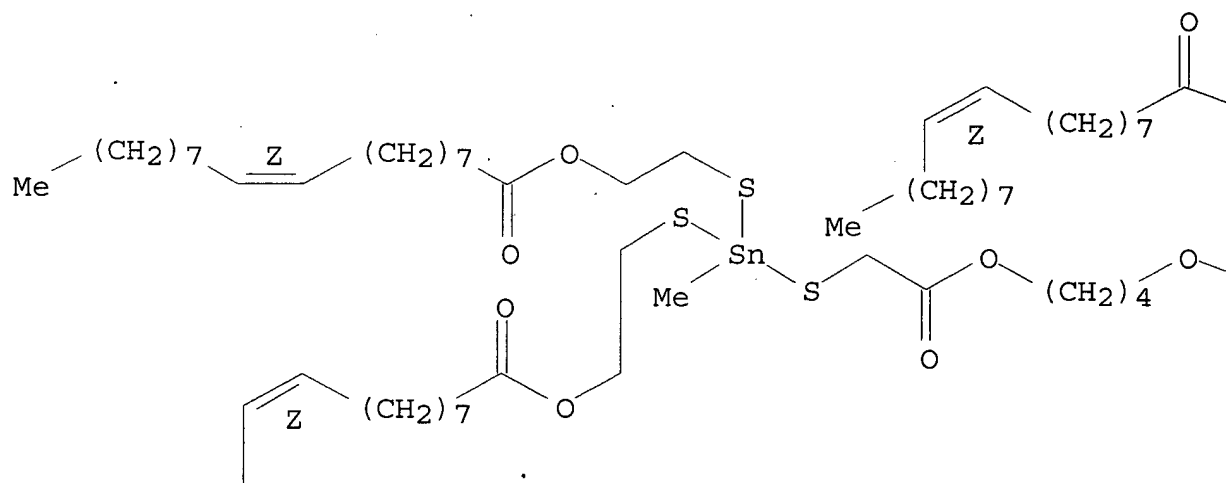
CN Nonanoic acid, 3-mercaptopropyl ester (9CI) (CA INDEX NAME)



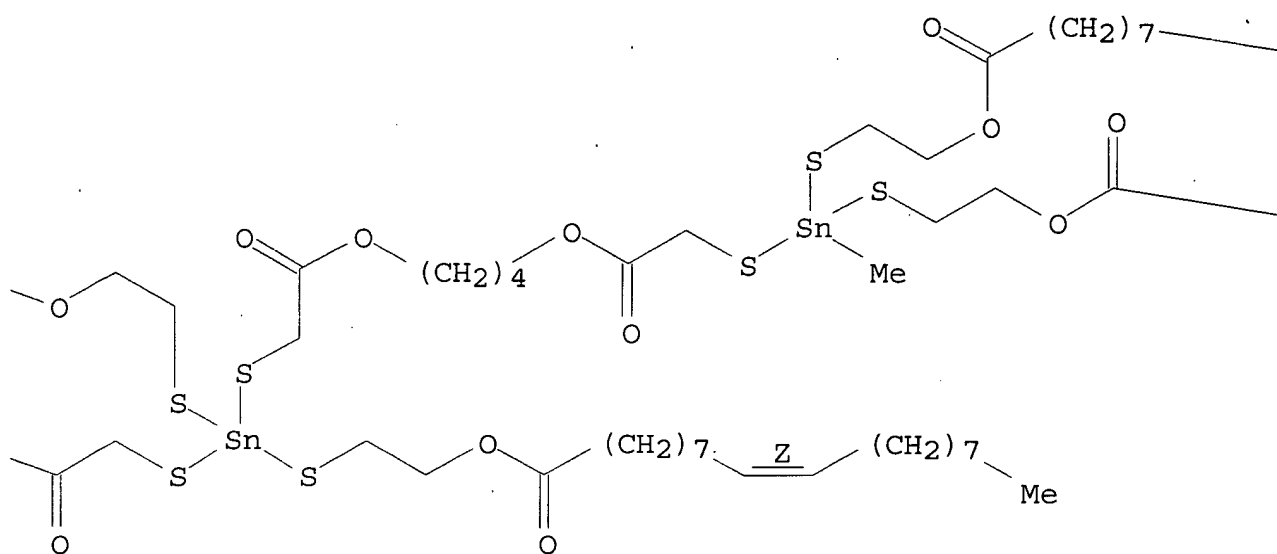
CN 8,13,21-Trioxa-3,5,16,18-tetrathia-4,17-distannanonatriacon-30-
enoic acid, 17-methyl-7,14,22-trioxo-4,4,17-tris[[2-[(1-oxo-9-
octadecenyl)oxy]ethyl]thio]-, 9-methyl-6,14-dioxo-9-[[2-[(1-oxo-9-
octadecenyl)oxy]ethyl]thio]-5,13-dioxa-8,10-dithia-9-
stannahentriacont-22-en-1-yl ester, (all-Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

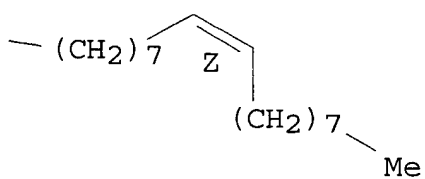
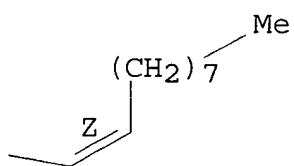
PAGE 1-A



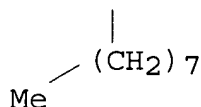
PAGE 1-B



PAGE 1-C

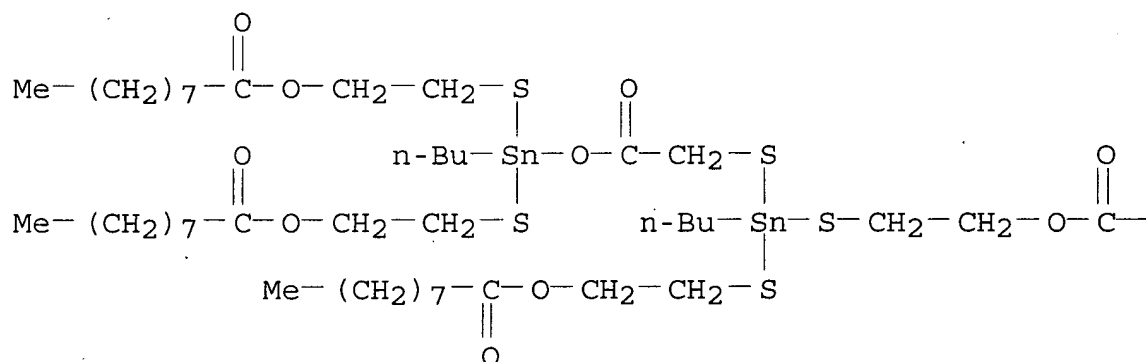


PAGE 2-A

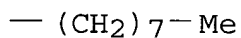


RN 83890-20-4 ZCAPLUS
 CN Nonanoic acid, [butyl[[4-butyl-2,9-dioxo-4-[[2-[(1-oxononyl)oxy]ethyl]thio]-3,8-dioxa-5-thia-4-stannaheptadec-1-yl]thio]stannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

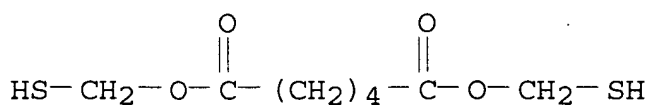
PAGE 1-A



PAGE 1-B



RN 83899-94-9 ZCAPLUS
 CN Hexanedioic acid, bis(mercaptomethyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 10194-00-0 27564-01-8

59118-78-4 59118-80-8 59138-44-2

83890-15-7 83890-16-8 83890-17-9

83890-18-0 83890-20-4 83899-94-9

(heat stabilizer compns. contg., for PVC)

L48 ANSWER 20 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:493439 Document No. 97:93439 Sterilization of vinyl halide polymer articles with ionizing radiations. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50070 A2 19820421, 19 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401511 19810930. PRIORITY: FR 1980-21662 19801010.

AB An organotin compd. or organoantimony compd. and a thiol (contg. 1 SH group/3-10 C) are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH₂)₇]₂Sn(SCH₂CO₂R)₂ (R = isooctyl) [26401-97-8] and 3 phr RSCH₂CH₂OR (R = COCH:CM₂H₅) [82684-97-7] was mixed with 3% glycerol bis(mercaptoacetate) I) [63657-12-5] and exposed to .gamma. radiation (2.76 Mrad). The resin was colorless. A resin contg. no I was strongly discolored after irradiation.

IT 10194-00-0 26401-97-8 82530-57-2

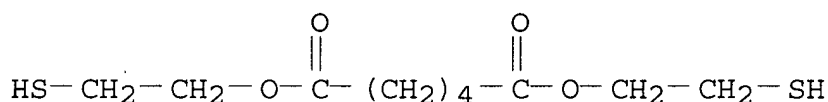
82530-58-3 82530-59-4 82530-60-7

82530-61-8 82538-18-9 82554-77-6

(stabilization of PVC against ionizing radiation by)

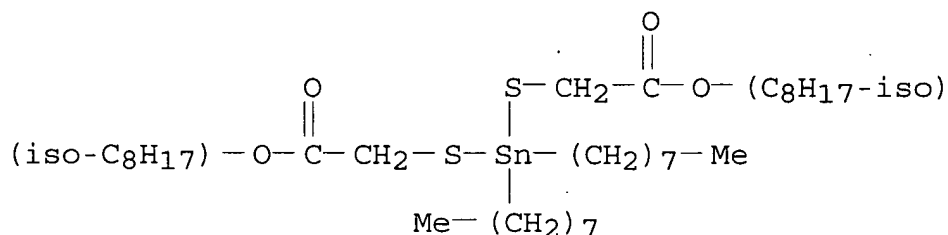
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



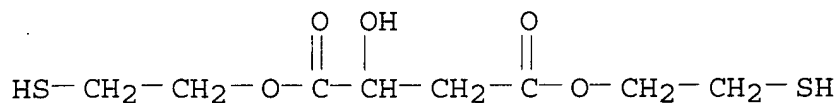
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



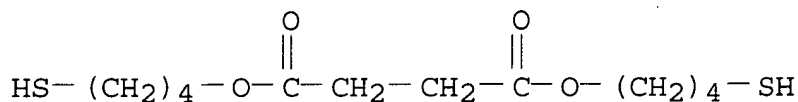
RN 82530-57-2 ZCAPLUS

CN Butanedioic acid, hydroxy-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



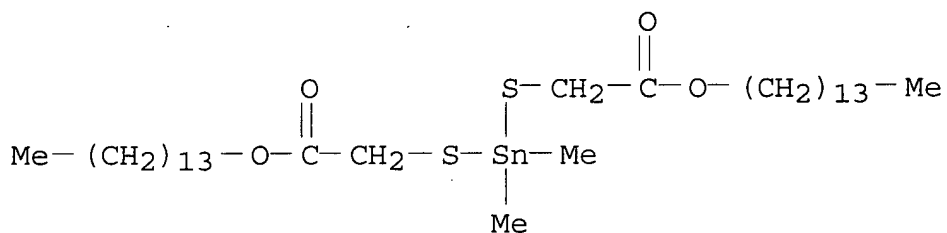
RN 82530-58-3 ZCAPLUS

CN Butanedioic acid, bis(4-mercaptobutyl) ester (9CI) (CA INDEX NAME)



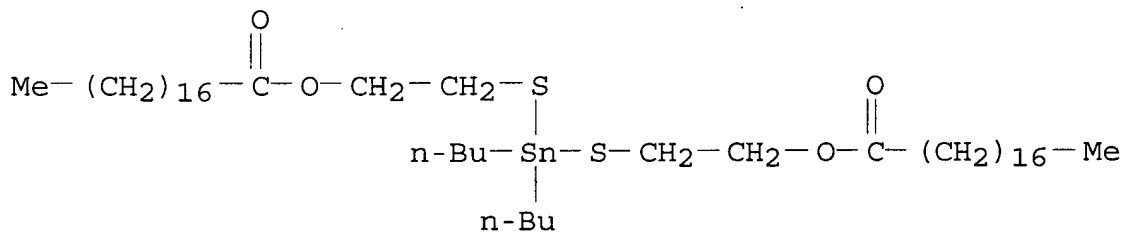
RN 82530-59-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4,4-dimethyl-7-oxo-, tetradecyl ester (9CI) (CA INDEX NAME)



RN 82530-60-7 ZCAPLUS

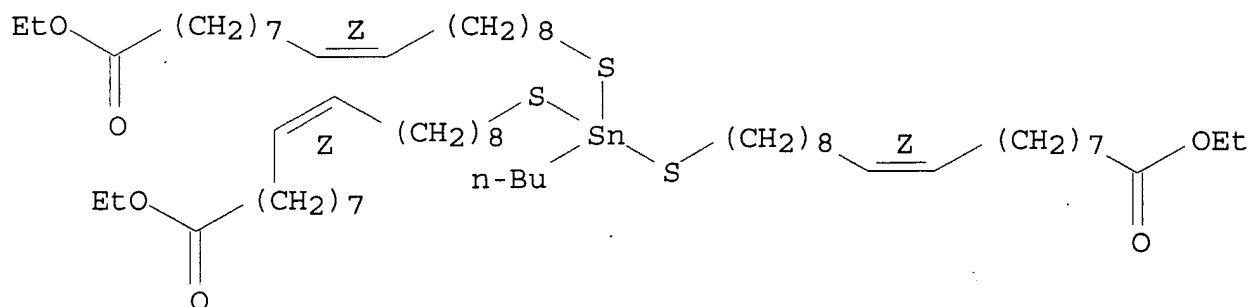
CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 82530-61-8 ZCAPLUS

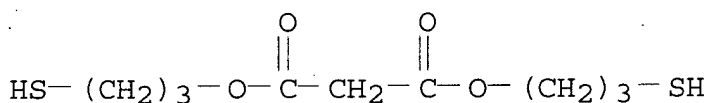
CN 3-Oxa-22,24-dithia-23-stannadotetraconta-12,33-dien-42-oic acid, 23-butyl-23-[(18-ethoxy-18-oxo-9-octadecenyl)thio]-4-oxo-, ethyl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



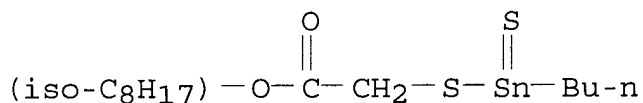
RN 82538-18-9 ZCAPLUS

CN Propanedioic acid, bis(3-mercaptopropyl) ester (9CI) (CA INDEX NAME)



RN 82554-77-6 ZCAPLUS

CN Acetic acid, [(butylthioxostannyl)thio]-, isooctyl ester (9CI) (CA INDEX NAME)



IT 10194-00-0 26401-97-8 82530-57-2

82530-58-3 82530-59-4 82530-60-7

82530-61-8 82538-18-9 82554-77-6

(stabilization of PVC against ionizing radiation by)

L48 ANSWER 21 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:493438 Document No. 97:93438 Polymers resistant against ionizing radiation. Kornbaum, Simon; Chenard, Jean Yves (ATO-Chimie S. A., Fr.). Eur. Pat. Appl. EP 50071 A2 19820421, 18 pp. DESIGNATED STATES: R: AT, CH, DE, GB, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1981-401512 19810930. PRIORITY: FR 1980-21816 19801013.

AB An organotin or organoantimony compd., a thiol, and hydroquinone (I) [123-31-9] are added to PVC [9002-86-2] formulations to inhibit degrdn. by ionizing radiation, e.g., during sterilization of PVC containers. Thus, a PVC formulation contg. 1.5 phr [Me(CH2)7]2Sn(SCH2CO2R)2 (R = isooctyl) [26401-97-8] and 3 phr RSCH2CH2OR (R = COCH:CMenH2) [82684-97-7] was mixed with 3% bis(2-mercaptoethyl) adipate (II) [10194-00-0] and 0.5% I

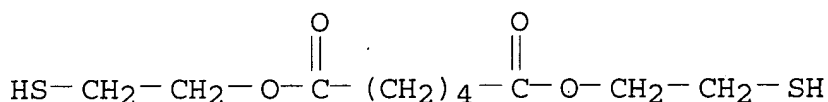
and exposed to .gamma. radiation (2.76 Mrad). The resin was slightly discolored. A resin contg. no I was slightly more discolored. A resin contg. no I or II was strongly discolored.

IT 10194-00-0 26401-97-8 27564-01-8
82530-59-4 82530-60-7 82530-61-8
82554-77-6

(stabilization of PVC against ionizing radiation by)

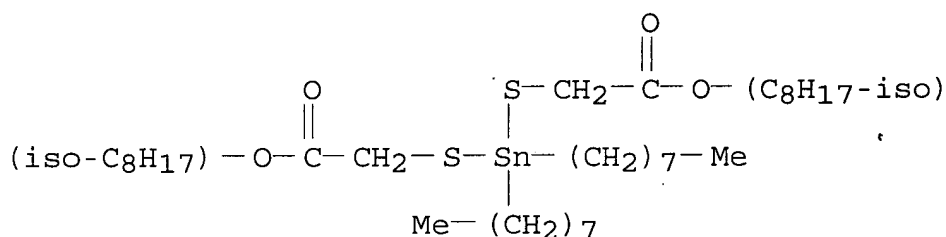
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



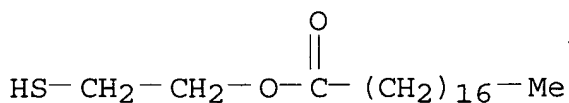
RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



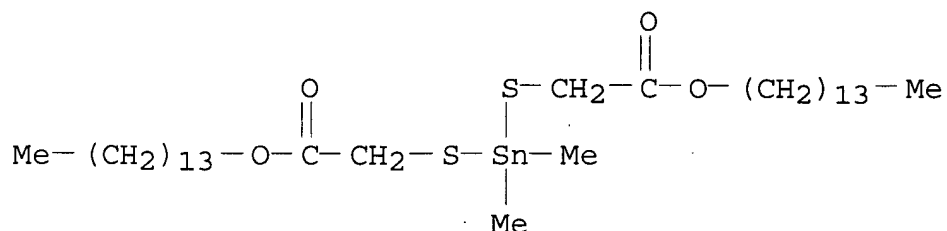
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

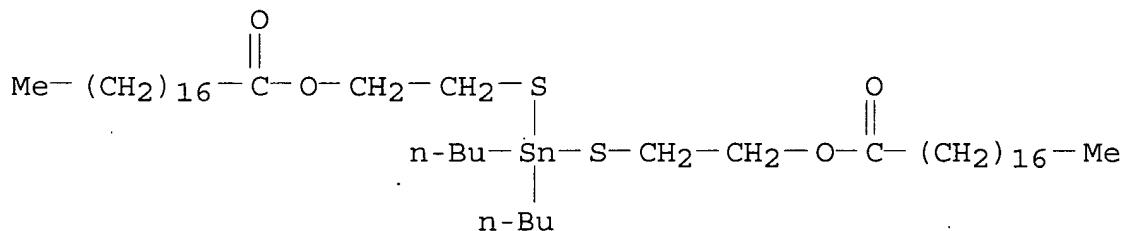


RN 82530-59-4 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4,4-dimethyl-7-oxo-, tetradecyl ester (9CI) (CA INDEX NAME)



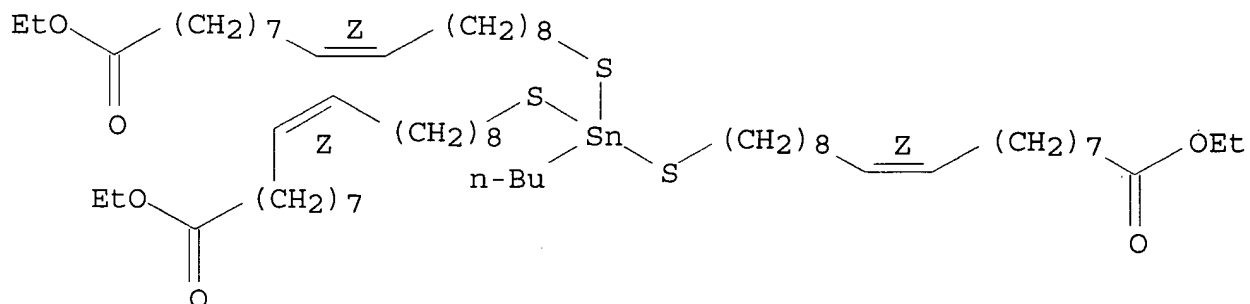
RN 82530-60-7 ZCAPLUS

CN Octadecanoic acid, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

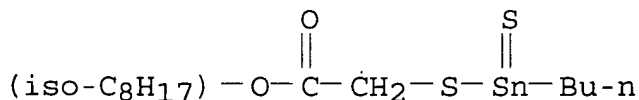
RN 82530-61-8 ZCAPLUS

CN 3-Oxa-22,24-dithia-23-stannadotetraconta-12,33-dien-42-oic acid,
23-butyl-23-[(18-ethoxy-18-oxo-9-octadecenyl)thio]-4-oxo-, ethyl
ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 82554-77-6 ZCAPLUS

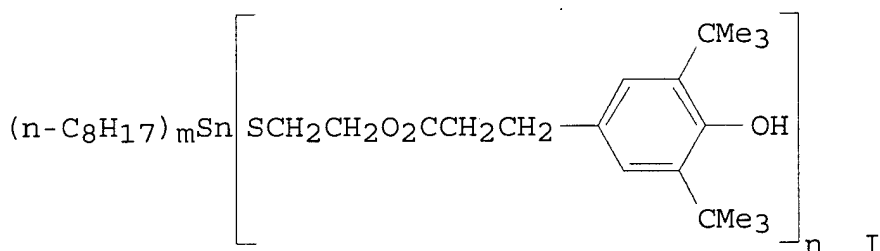
CN Acetic acid, [(butylthioxostannyl)thio]-, isooctyl ester (9CI) (CA
INDEX NAME)

IT 10194-00-0 26401-97-8 27564-01-8
82530-59-4 82530-60-7 82530-61-8
82554-77-6

(stabilization of PVC against ionizing radiation by)

L48 ANSWER 22 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
1982:407227 Document No. 97:7227 Metal mercaptides of esters of
.beta.-mercapto alkanols, their use as stabilizers and organic
materials stabilized therewith. Knobloch, Gerrit; Wehner, Wolfgang;
Wirth, Hermann O. (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP
34118 A2 19810819, 23 pp. DESIGNATED STATES: R: BE, DE, FR, GB,
IT, NL. (German). CODEN: EPXXDW. APPLICATION: EP 1981-810027
19810202. PRIORITY: CH 1980-1036 19800208.

GI



AB Metal mercaptides of mercaptoalkanol esters of sterically hindered
hydroxyphenylalkanecarboxylic acids are useful stabilizers for
Cl-contg. thermoplastics, elastomers, and lubricants. Thus, 8.4 g
NaHCO₃ was added to a soln. of di-n-octyltin dichloride [3542-36-7]
and 23.7 g .beta.-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid
2-mercaptoethyl ester [27568-68-9] in 100 mL CHCl₃. The
water formed in the reaction was azeotropically distd. and the
reaction soln. was filtered and evapd. in vacuo to give 36.4 g
mercaptide with the structure I (m = 2; n = 2) [80048-75-5
]. PVC [9002-86-2] (100 Parts) contg. montanic acid ester 0.2,
Castor oil 1, and I) (m = 1, n = 3) [80048-76-6] was
blended at 180.degree. and rolled at 200.degree.. The yellowness
index of the compn. was 4.8, 6.0, 7.8, 9.3, 12.6, and 22.6 after 3,
6, 9, 12, 15, and 18 min, resp.

IT 80048-71-1 80048-72-2 80048-73-3
80048-74-4 80048-75-5 80048-76-6
80822-84-0

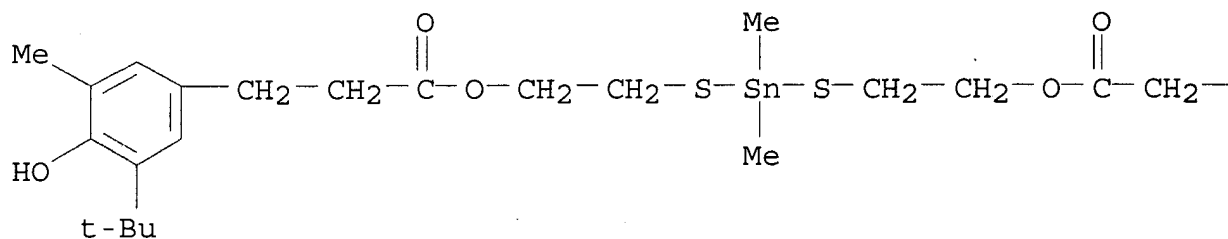
(heat stabilizers, for chlorine-contg. thermoplastics, rubbers
and lubricants)

RN 80048-71-1 ZCAPLUS

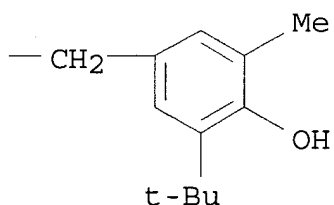
CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-methyl-,
(dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX

NAME)

PAGE 1-A



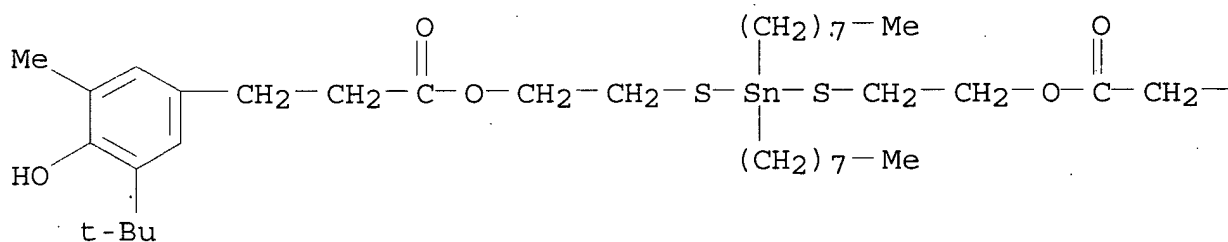
PAGE 1-B



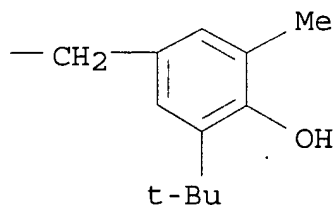
RN 80048-72-2 ZCAPLUS

CN Benzenepropanoic acid, 3-(1,1-dimethylethyl)-4-hydroxy-5-methyl-,
(dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
NAME)

PAGE 1-A

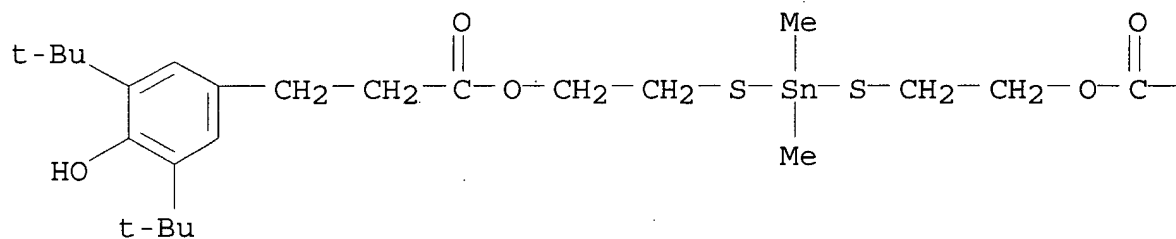


PAGE 1-B

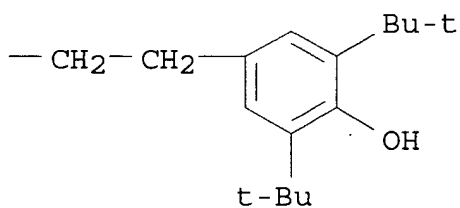


RN 80048-73-3 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A

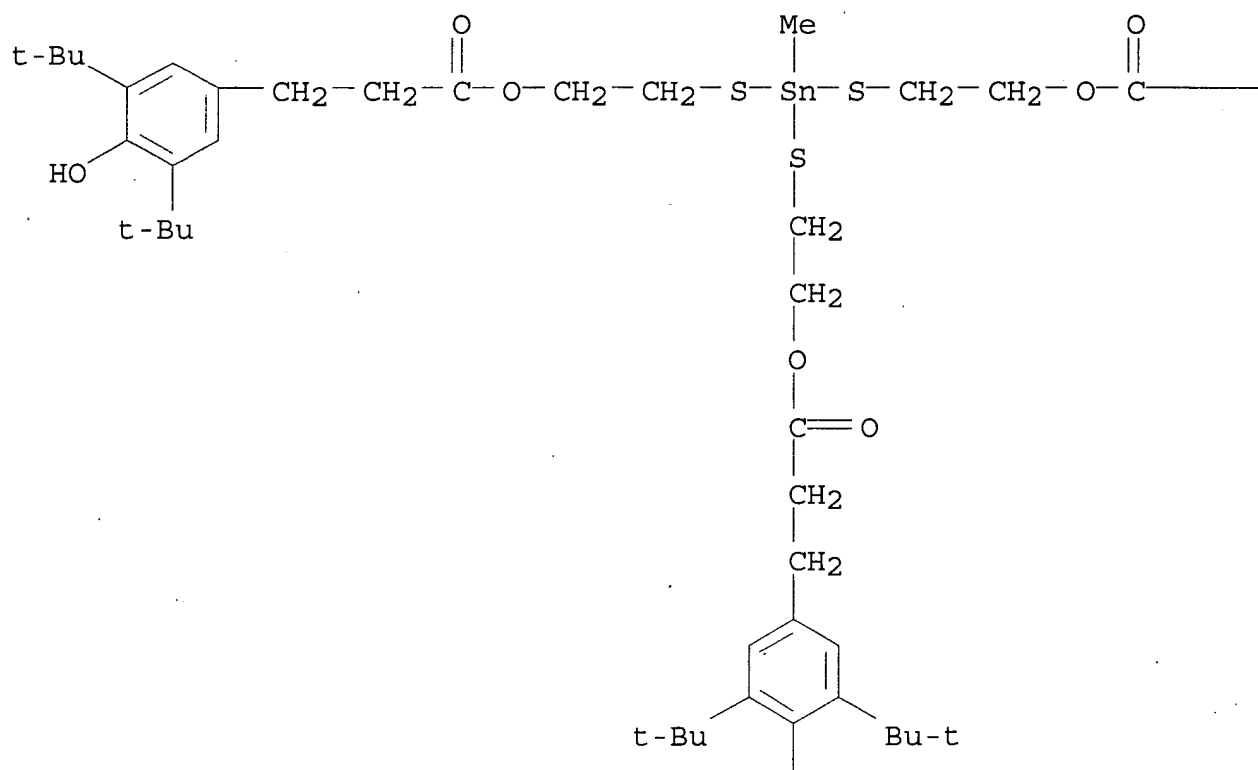


PAGE 1-B

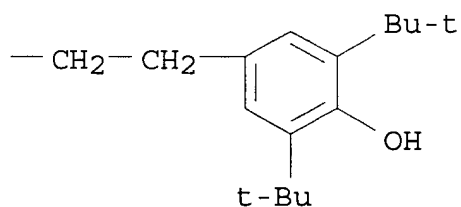


RN 80048-74-4 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A



PAGE 1-B



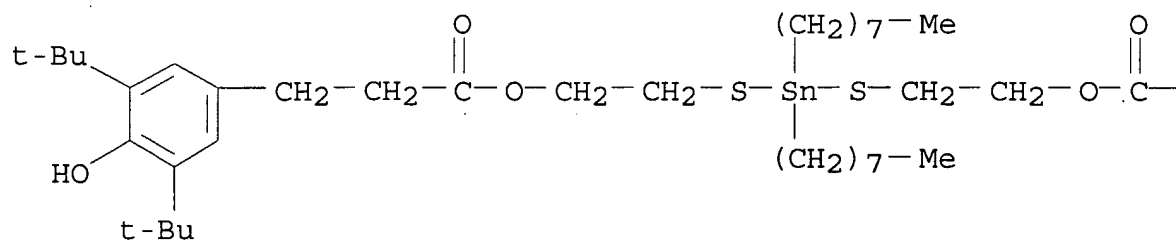
PAGE 2-A



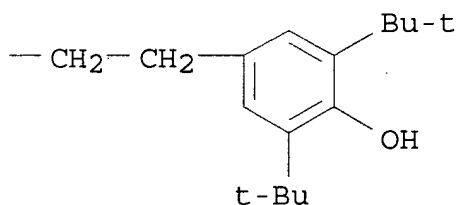
RN 80048-75-5 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (dioctylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX

NAME)

PAGE 1-A



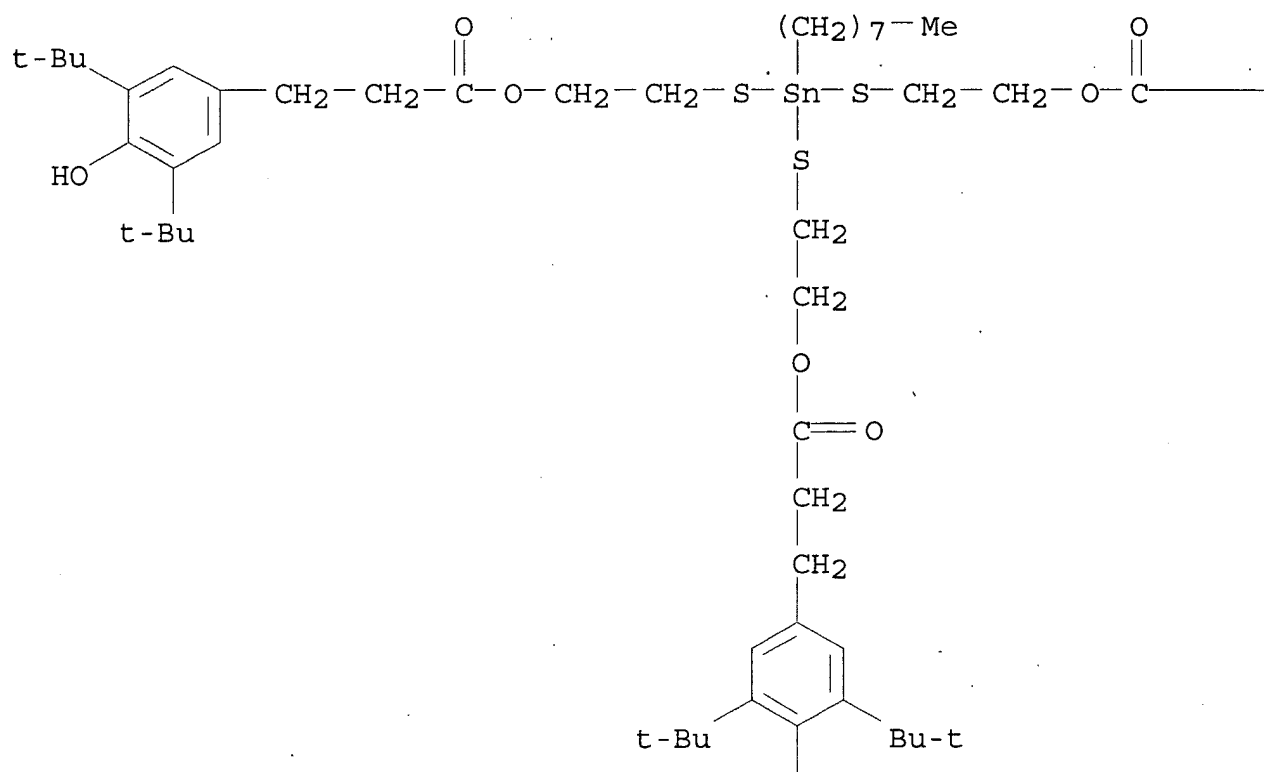
PAGE 1-B



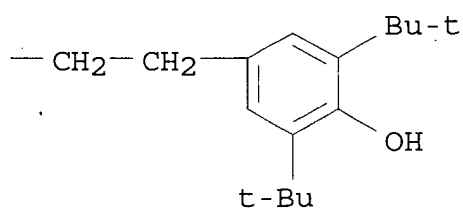
RN 80048-76-6 ZCAPLUS

CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 (octylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX
 NAME)

PAGE 1-A



PAGE 1-B

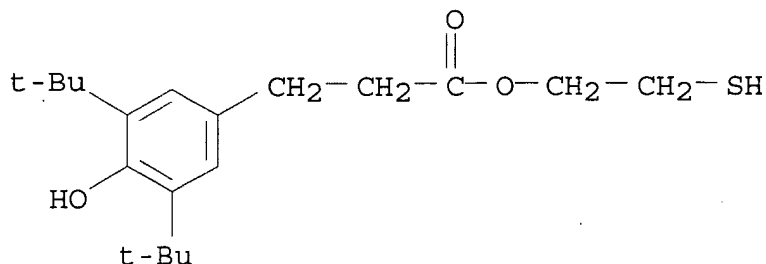


PAGE 2-A

OH

RN 80822-84-0 ZCAPLUS
 CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
 2-mercaptoethyl ester, antimony(3+) salt (3:1) (9CI) (CA INDEX)

NAME)

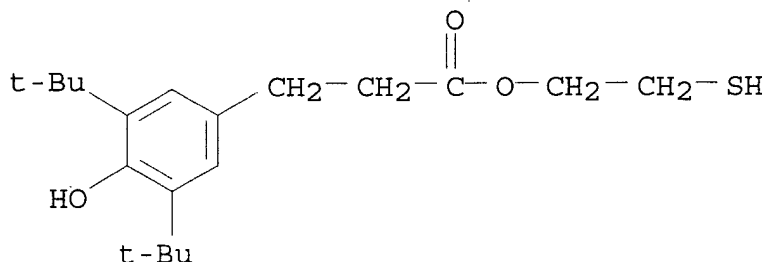


● 1/3 Sb(III)

IT 27568-68-9

(reaction of, with metal compds.)

RN 27568-68-9 ZCAPLUS

CN Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-,
2-mercaptopropanoate ester (9CI) (CA INDEX NAME)

IT 80048-71-1 80048-72-2 80048-73-3

80048-74-4 80048-75-5 80048-76-6

80822-84-0

(heat stabilizers, for chlorine-contg. thermoplastics, rubbers
and lubricants)

IT 27568-68-9

(reaction of, with metal compds.)

L48 ANSWER 23 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1982:36257 Document No. 96:36257 Thermal stabilization compositions
for halogenated resins. Bohen, J. M. (Pennwalt Corp., USA). Belg.
BE 888346 A1 19810731, 35 pp. (French). CODEN: BEXXAL.
APPLICATION: BE 1981-204426 19810409. PRIORITY: US 1980-128606
19800310.

AB (Iso-C8H17O2CCH2S)2SnMe2 (I) [26636-01-1] or

(C17H35CO2CH2CH2S)3SnMe [59118-76-2],

(iso-C8H17O2CCH2S)4Sn (II) [62568-17-6] or (C17H35CO2CH2CH2S)4Sn [

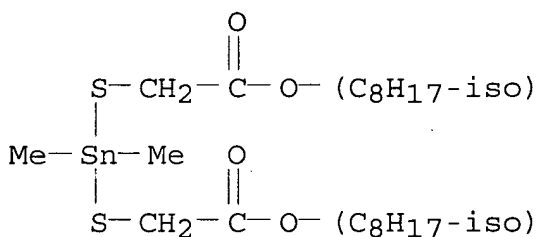
80233-79-0], and, in some cases, (C₁₇H₃₅CO₂CH₂CH₂S)₂Ba [69128-10-5] and/or a basic BaCO₃ compn. are added to PVC [9002-86-2] as heat stabilizers. Thus, a mixt. of PVC 100, Et acrylate-Me methacrylate copolymer 3, waxes 0.7, Ca stearate 1.4, TiO₂ 2, I 1.2, and II 0.3 g was stable for >12 min during processing at 215.degree..

IT 26636-01-1 59118-76-2 69128-10-5
80233-79-0

(heat stabilizers, for PVC)

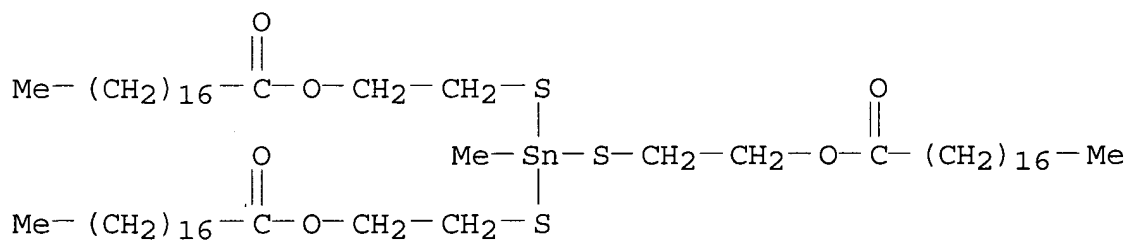
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



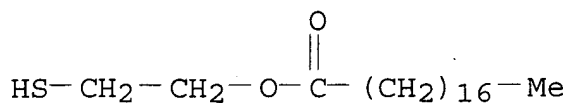
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



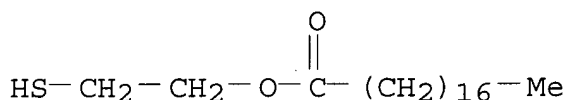
RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

RN 80233-79-0 ZCAPLUS
 CN Octadecanoic acid, 2-mercaptoethyl ester, tin(4+) salt (9CI) (CA INDEX NAME)



● 1/4 Sn(IV)

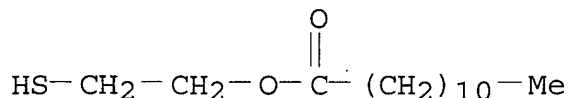
IT 26636-01-1 59118-76-2 69128-10-5
 80233-79-0
 (heat stabilizers, for PVC)

L48 ANSWER 24 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1981:176132 Document No. 94:176132 Stabilized halogen-containing resin compositions. (Adeka Argus Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 55160044 19801212 Showa, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1979-66831 19790531.

AB Organotin mercaptocarboxylic acid esters and carboxylic acid mercaptoalkyl esters are used as heat stabilizers. Thus, a compn. of Geon 103 EP [9002-86-2] 100, dibutyltin bis(2-ethylhexylmercaptoacetate) [10584-98-2] 0.4, paraffin wax 1, polyethylene wax 0.5, Ca stearate 1, and 2-mercaptoethyl laurate (I) [60642-66-2] 0.1 part had thermal stability 115 min and melt flow index 5.7 at 190.degree., compared with 75 and 3.8, resp., for a similar compn. contg. no I.

IT 60642-66-2
 (heat stabilizers, contg. dibutyltin bis(ethylhexylmercaptoacetate), for PVC)

RN 60642-66-2 ZCAPLUS
 CN Dodecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

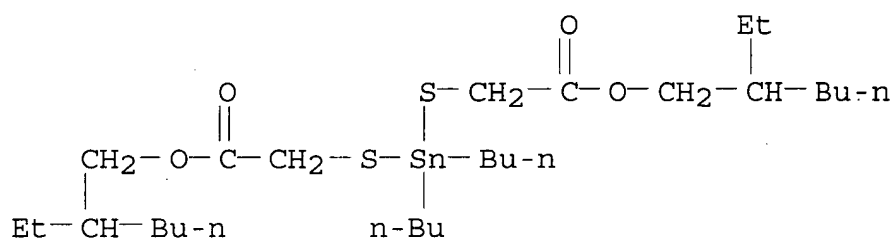


IT 10584-98-2

(heat stabilizers, contg. mercaptoethyl laurate, for PVC)

RN 10584-98-2 ZCAPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4,4-dibutyl-10-ethyl-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



IT 60642-66-2

(heat stabilizers, contg. dibutyltin bis(ethylhexylmercaptoacetate), for PVC)

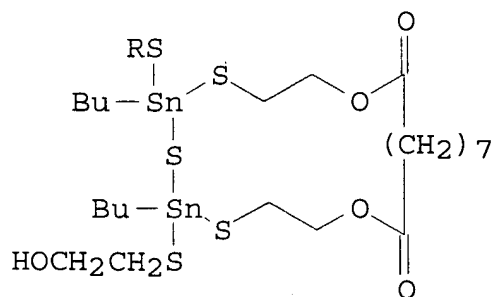
IT 10584-98-2

(heat stabilizers, contg. mercaptoethyl laurate, for PVC)

L48 ANSWER 25 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1981:47482 Document No. 94:47482 Organotin compounds and resins or polymers stabilized with them. Dworking, Robert Dally; Larkin, William Albert (M and T Chemicals Inc., USA). Eur. Pat. Appl. EP 11456 19800528, 101 pp. (English). CODEN: EPXXDW. APPLICATION: EP 1979-302520 19791109.

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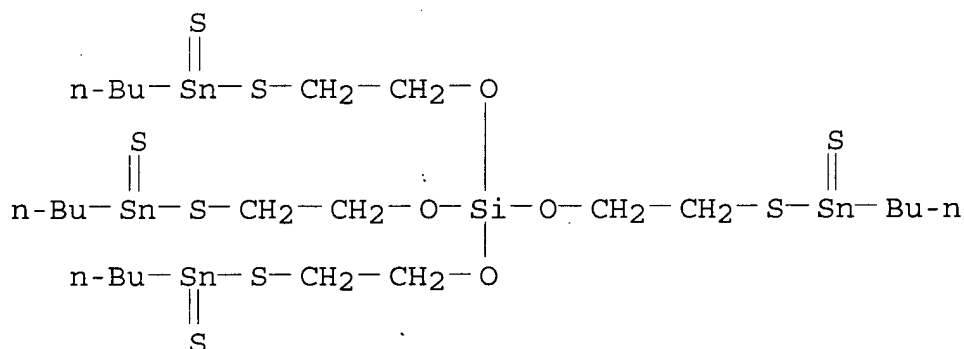
AB Approx. 20 organotin sulfide esters were prepd. by various procedures. Thus, 0.4 mol BuSnCl_3 , 0.8 mol NH_4OH , 0.2 mol $\text{HSCH}_2\text{CH}_2\text{OH}$, 0.2 mol $\text{Me}(\text{CH}_2)_{11}\text{SH}$, 0.2 mol $\text{HSCH}_2\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_7\text{CO}_2\text{CH}_2\text{CH}_2\text{SH}$, and 233 mol H_2O , was heated to 70.degree. 0.5 h by 0.2 mol Na_2S addn., the mixt. heated at 75.degree. 0.5 h, and the pH adjusted to 7 with NH_4OH to give 88 g I (R = n-dodecyl). Also prepd. were $[(\text{BuSn}(\text{S})\text{SCH}_2\text{CH}_2\text{O})_4\text{M}]$ (M = Si, Ti), $[\text{BuSn}(\text{S})\text{SCH}_2\text{CH}_2\text{O}]_3\text{M}$ (M = B, P, Al), and I (R = $\text{CH}_2\text{CO}_2(\text{CH}_2)_5\text{CHMe}_2$). The compds. prepd. were useful as heat stabilizers for halogenated polymers such as PVC.

IT 76192-50-2P 76192-51-3P 76192-52-4P
76192-53-5P 76192-54-6P 76192-55-7P
76192-56-8P 76207-93-7P 76207-96-0P

(prep. and activity as heat stabilizer for polymers)

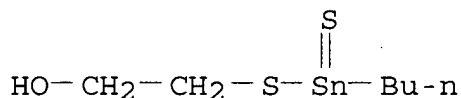
RN 76192-50-2 ZCAPLUS

CN Silicic acid (H_4SiO_4), tetrakis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI) (CA INDEX NAME)



RN 76192-51-3 ZCAPLUS

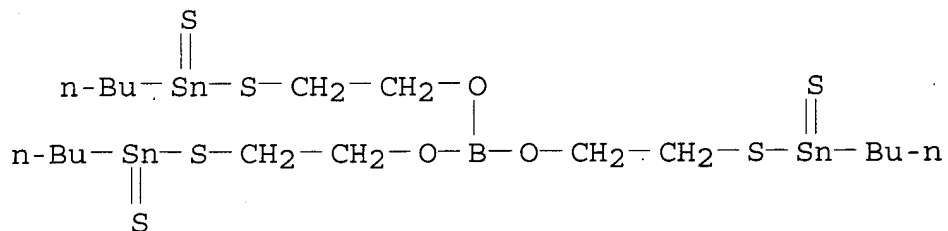
CN Ethanol, 2-[(butylthioxostannyl)thio]-, titanium(4+) salt (9CI) (CA INDEX NAME)



● 1/4 Ti(IV)

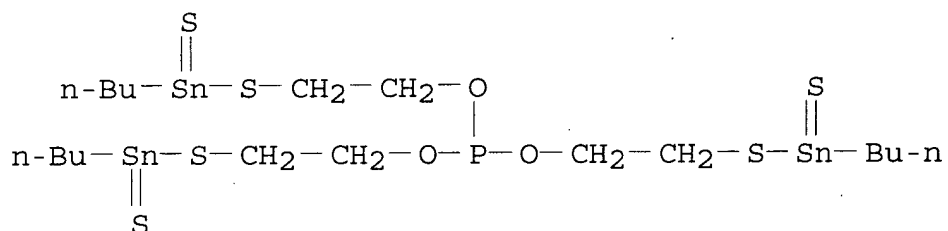
RN 76192-52-4 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, triester with boric acid (H_3BO_3) (9CI) (CA INDEX NAME)



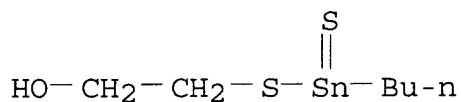
RN 76192-53-5 ZCAPLUS

CN Ethanol, 2-[(butylthioxostannyl)thio]-, phosphite (3:1) (9CI) (CA INDEX NAME)



RN 76192-54-6 ZCAPLUS

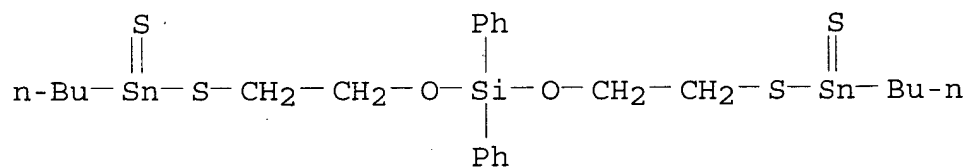
CN Ethanol, 2-[(butylthioxostannyl)thio]-, aluminum salt (9CI) (CA INDEX NAME)



● 1/3 Al

RN 76192-55-7 ZCAPLUS

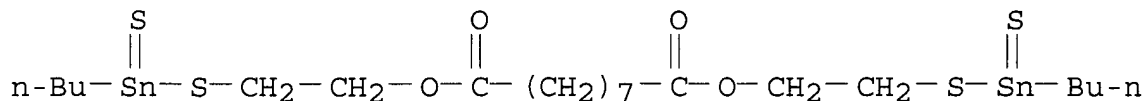
CN 9,11-Dioxa-6,14-dithia-10-sila-5,15-distannanonadecane, 10,10-diphenyl-5,15-dithioxo- (9CI) (CA INDEX NAME)



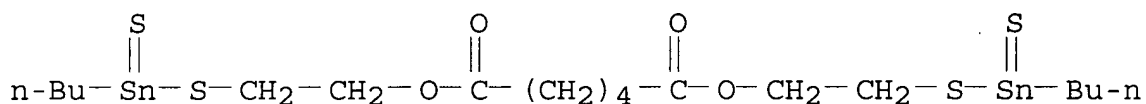
RN 76192-56-8 ZCAPLUS

CN Nonanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)

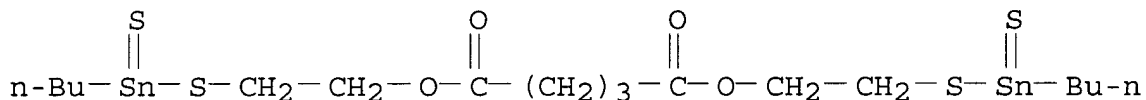
(CA INDEX NAME)



RN 76207-93-7 ZCAPLUS

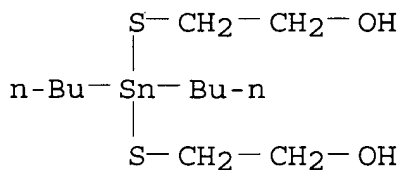
CN Hexanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester (9CI)
(CA INDEX NAME)

RN 76207-96-0 ZCAPLUS

CN Pentanedioic acid, bis[2-[(butylthioxostannyl)thio]ethyl] ester
(9CI) (CA INDEX NAME)IT 3026-81-1P 70729-71-4P
(prepn. of)

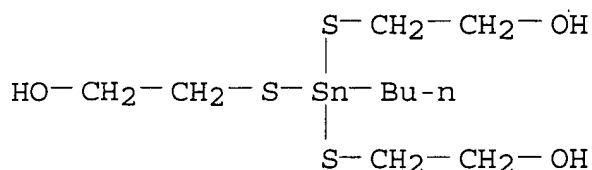
RN 3026-81-1 ZCAPLUS

CN Ethanol, 2,2'-[(dibutylstannylene)bis(thio)]bis- (9CI) (CA INDEX NAME)



RN 70729-71-4 ZCAPLUS

CN Ethanol, 2,2',2''-[(butylstannylidyne)tris(thio)]tris- (9CI) (CA INDEX NAME)

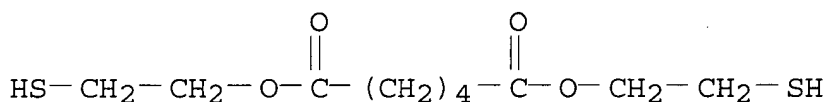


IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

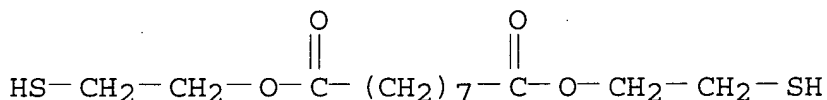
RN 10194-00-0 ZCAPLUS

CN Hexanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



RN 76192-65-9 ZCAPLUS

CN Nonanedioic acid, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)



IT 76192-50-2P 76192-51-3P 76192-52-4P

76192-53-5P 76192-54-6P 76192-55-7P

76192-56-8P 76207-93-7P 76207-96-0P

(prepn. and activity as heat stabilizer for polymers)

IT 3026-81-1P 70729-71-4P

(prepn. of)

IT 10194-00-0 76192-65-9

(reaction of, with butyltin chlorides)

L48 ANSWER 26 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1980:472945 Document No. 93:72945 Stabilization of halogenated vinyl resins. (Societe Nationale Elf Aquitaine S. A., Fr.). Jpn. Kokai Tokkyo Koho JP 55031900 19800306 Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1979-108744 19790828.

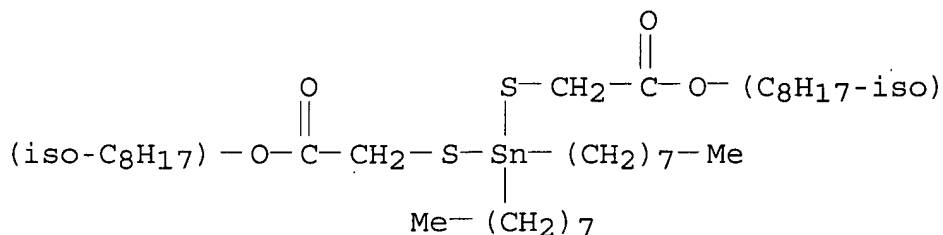
AB Mercaptans such as mercaptoethyl stearate (I) [27564-01-8] and 3-thioglycerol myristate [74340-54-8] and metal compds. such as (dioctyltin)bis(isooctyl mercaptoacetate) (II) [26401-97-8] and BuSnO_2H [2273-43-0] were used as heat stabilizers. Thus, a mixt. of PVC [9002-86-2] 100, wax 0.5, I 1, and II 0.07 part had browning time 9 min at 180.degree., compared with 5 min for a similar mixt. contg. no I.

IT 26401-97-8

(heat stabilizers, contg. mercaptoethyl stearate, for PVC)

RN 26401-97-8 ZCAPLUS

CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

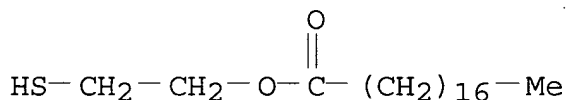


IT 27564-01-8

(heat stabilizers, contg. tin compds., for PVC)

RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 26401-97-8

(heat stabilizers, contg. mercaptoethyl stearate, for PVC)

IT 27564-01-8

(heat stabilizers, contg. tin compds., for PVC)

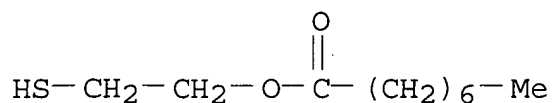
L48 ANSWER 27 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN
 1979:104943 Document No. 90:104943 Stabilizers for polymer compositions. Kugele, Thomas Gordon (Cincinnati Milacron Chemicals, Inc., USA). Belg. BE 864976 19780717, 29 pp. (French). CODEN: BEXXAL. APPLICATION: BE 1978-186002 19780316.

AB Organotin sulfides or polysulfides prepd. from 2-mercaptoethyl caprylate (I), Na₂S, and acetylacetyl tin trichloride [69138-80-3], from I, Na₂S, bis(3-oxobutyl)tin dichloride, and 3-oxobutyltin trichloride (II), from 2-mercaptoethyl oleate (III) [59118-78-4], Na₂S₂, and 4-oxopentyltin trichloride [69242-48-4], from isooctyl thioglycolate [25103-09-7], Na₂S, and II, or from similar compds. are useful as heat stabilizers for polymers such as PVC [9002-86-2]. Thus, III, NaS, and MeO₂CCH₂CH₂SnCl₃ [59586-13-9] were used to prep. [(ROCH₂CH₂S)₂(MeO₂CCH₂CH₂)Sn]₂S (R = oleoyl) [69242-50-8] which was used as a heat stabilizer in PVC.

IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide
 (heat stabilizers, for PVC)

RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 69242-47-3P

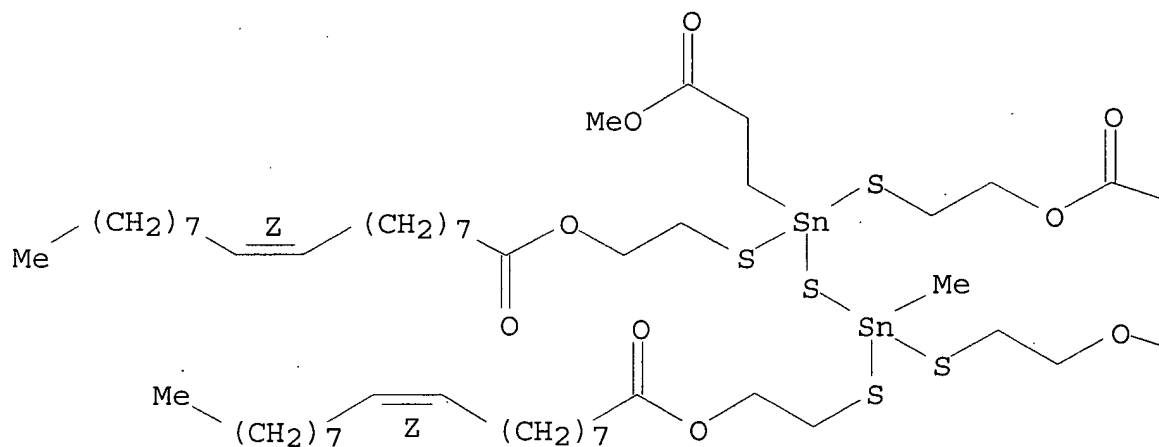
(manuf. of, as heat stabilizers for PVC)

RN 69242-47-3 ZCAPLUS

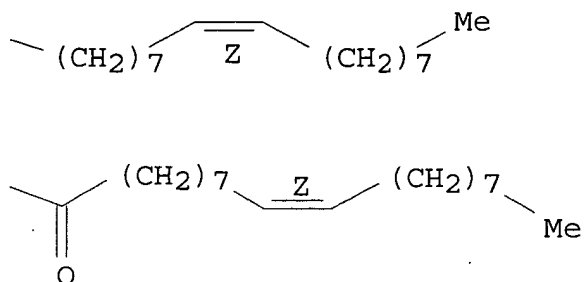
CN 9-Octadecenoic acid (9Z)-, [1-(3-methoxy-3-oxopropyl)-3-methyl-1,3-distannathianediylidene]tetrakis(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



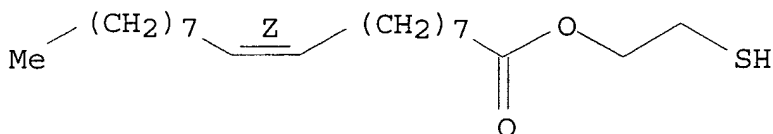
IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

RN 59118-78-4 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 57813-59-9D, reaction products with organotin chlorides and sodium sulfide

(heat stabilizers, for PVC)

IT 69242-47-3P

(manuf. of, as heat stabilizers for PVC)

IT 59118-78-4

(reaction of, with mercapto compds. and sodium sulfide)

L48 ANSWER 28 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1979:72863 Document No. 90:72863 Heat stabilizer composition for halogenated resins. Bohen, Joseph Michael; Toukan, Sameeh Said (Pennwalt Corp., USA). U.S. US 4115352 19780919, 11 pp. (English). CODEN: USXXAM. APPLICATION: US 1977-799862 19770523.

AB Mixts. of an alkali or alk. earth metal salt (prepd. from the metal alkoxide) of a mercaptan or mercapto acid with a S-contg. organotin or mercury compd. (and optionally an overbased org. complex of an alk. earth metal carbonate) are synergistic heat stabilizers for PVC [9002-86-2]. Thus, 100 parts PVC contg. 1.5 parts dibutyltin bis(isooctyl thioglycolate) (I) [25168-24-5] and 1.5

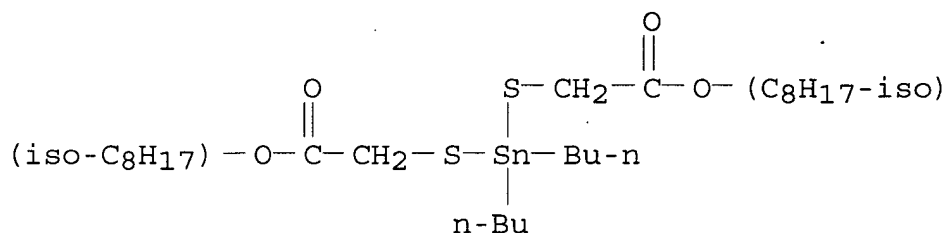
parts barium bis(isooctyl thioglycolate) (II) [66368-81-8] [prepd. from Ba(OMe)₂ [2914-23-0]] plus the usual processing aids and additives had heat failure time (415.degree.) on a Brabender plastograph 37 min, compared to 20 or 4 min for PVC contg. only I or II, resp.

IT 25168-24-5 26636-01-1 54849-38-6
59118-76-2 65291-38-5

(heat stabilizers, contg. alkali or alk. earth mercaptides, for PVC)

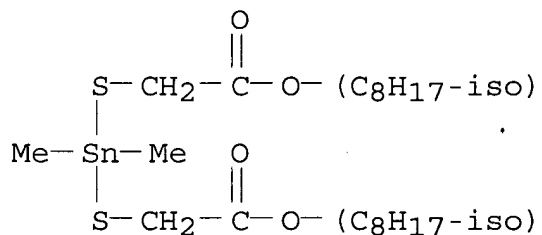
RN 25168-24-5 ZCAPLUS

CN Acetic acid, 2,2'-[(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



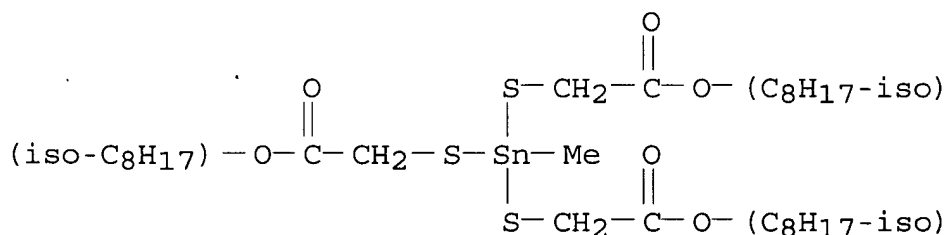
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



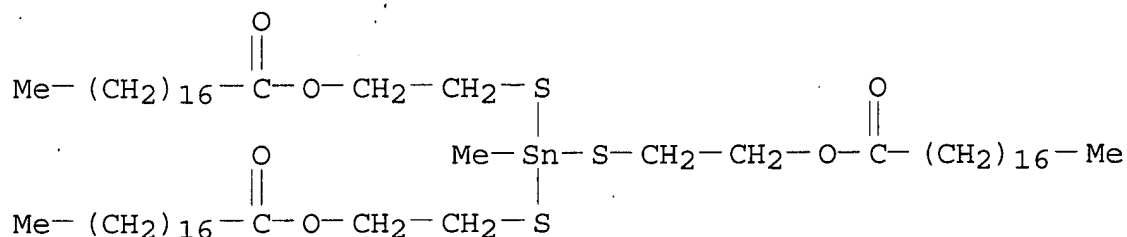
RN 54849-38-6 ZCAPLUS

CN Acetic acid, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



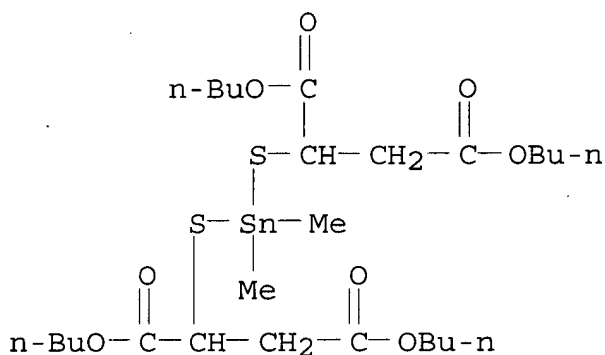
RN 59118-76-2 ZCAPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 65291-38-5 ZCAPLUS

CN Butanedioic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, tetrabutyl ester (9CI) (CA INDEX NAME)



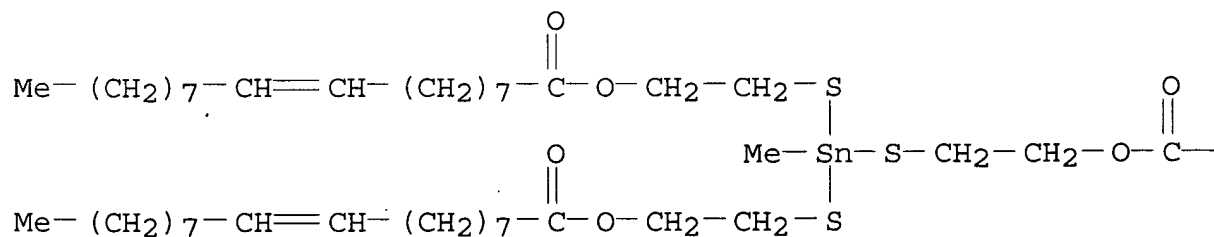
IT 59118-79-5

(heat stabilizers, contg. barium carbonate overbased org. complex and barium bis(mercaptoethyl oleate), for PVC)

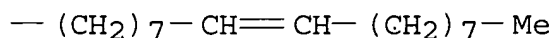
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

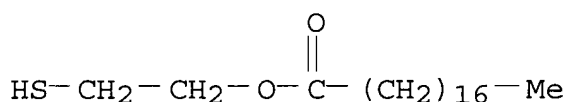


IT 69128-10-5

(heat stabilizers, contg. organotin or mercury compds., for PVC)

RN 69128-10-5 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester, barium salt (9CI) (CA INDEX NAME)



● 1/2 Ba

IT 25168-24-5 26636-01-1 54849-38-6

59118-76-2 65291-38-5

(heat stabilizers, contg. alkali or alk. earth mercaptides, for PVC)

IT 59118-79-5

(heat stabilizers, contg. barium carbonate overbased org. complex and barium bis(mercaptoethyl oleate), for PVC)

IT 69128-10-5

(heat stabilizers, contg. organotin or mercury compds., for PVC)

L48 ANSWER 29 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1978:509971 Document No. 89:109971 Organotin compounds. Dworkin, Robert Dally; Ejk, Adam Joseph (M and T Chemicals, Inc., USA). Ger. Offen. DE 2749082 19780511, 19 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1977-2749082 19771102.

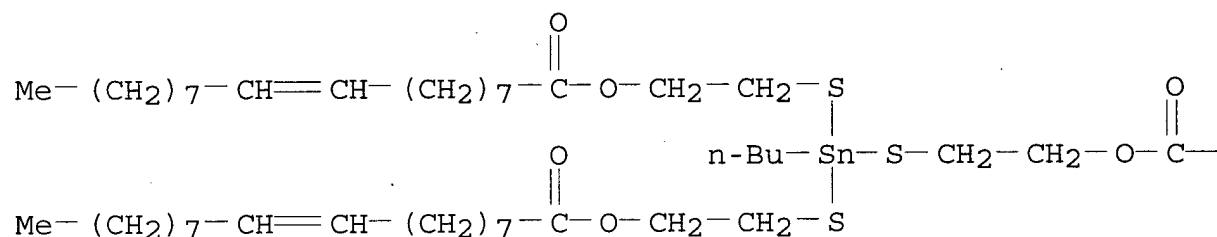
AB The title compds., $RqSn[S(CH_2)_mO_2CR_1]_4-q$ [R, R1 = C1-20 alkyl, cycloalkyl, aryl, aralkyl, alkaryl; m = 2, 3; q = 1-2], useful as polymer stabilizers, were prepd. Thus, 0.1 mol $BuSnCl_3$, 0.3 mol $HSCH_2CH_2OH$, and 43.3 g caprylic acid gave 93% $BuSn[SCH_2CH_2O_2C(CH_2)_6Me]_3$. Similarly prepd. were (Z)- $BuSn[SCH_2CH_2O_2C(CH_2)_7CH:CH(CH_2)_7Me]_3$ and $S[SnBu(SCH_2CH_2O_2C(CH_2)_6Me)_2]_2$.

IT 59118-80-8P 67361-76-6P

(prepn. of)

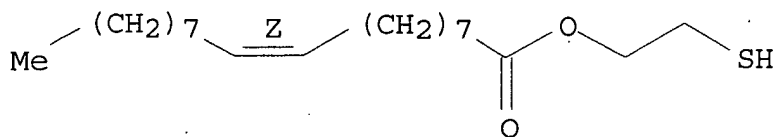
$$\begin{array}{c} \text{O} \\ \parallel \\ \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\ | \\ \text{n-Bu}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C} \begin{array}{c} \text{O} \\ \parallel \end{array} (\text{CH}_2)_6-\text{Me} \\ | \\ \text{O} \\ \parallel \\ \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array}$$

PAGE 1-A


$$-(\text{CH}_2)_7-\text{CH}=\text{CH}-(\text{CH}_2)_7-\text{Me}$$

RN	59118-78-4	ZCAPLUS	
CN	9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)		

Double bond geometry as shown.



IT 67361-77-7

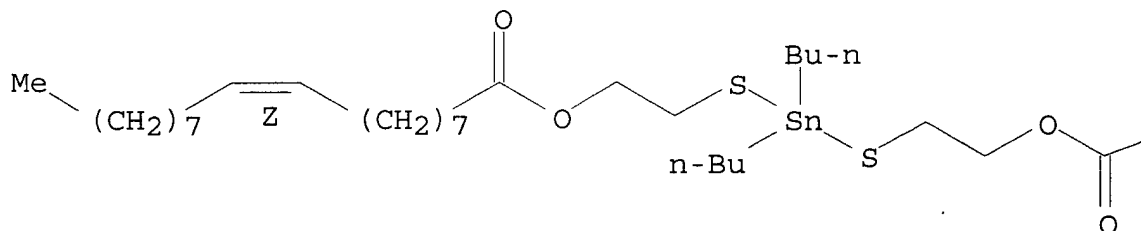
(stabilizer for polyvinylchloride)

RN 67361-77-7 ZCAPLUS

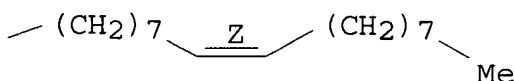
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



IT 59118-80-8P 67361-76-6P

(prepn. of)

IT 59118-78-4

(reaction with alkylhalostannanes)

IT 67361-77-7

(stabilizer for polyvinylchloride)

L48 ANSWER 30 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:508776 Document No. 85:108776 Organotin stabilizers for halo resins. (Cincinnati Milacron Chemicals, Inc., USA). Jpn. Kokai Tokkyo Koho JP 51020250 19760218 Showa, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1974-92241 19740812.

AB Me₂SnR₁R₂ (R₁ = R₂ = C₁₂H₂₅S, C₈H₁₇O₂CCH:CHCO₂, C₉H₁₉CO₂; R₁ = Cl, R₂ = C₈H₁₇O₂CCH₂S; R₁R₂ = S), (Me₂SnSCH₂CO₂C₈H₁₇)₂Sn (n = 1, 2), and Me₂Sn(SCH₂CO₂CH₂CH₂O₂CCH₂S)₂SnMe₂ were prepd. and used as

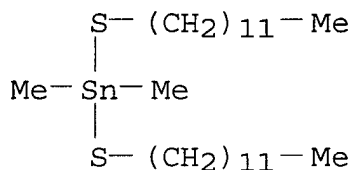
stabilizers for resins. Thus, 725 g Me₂SnCl₂ (contg. 0.5% Me₃SnCl) in H₂O and 415 g 62% Na₂S in H₂O were stirred 1 hr at 24-45.degree. to give 535 g Me₂SnS.

IT 51287-84-4P

(prepn. of, for stabilizers for resins)

RN 51287-84-4 ZCAPLUS

CN Stannane, bis(dodecylthio)dimethyl- (9CI) (CA INDEX NAME)

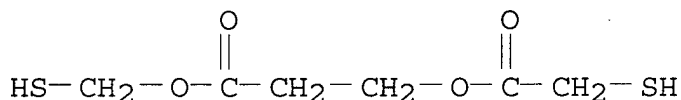


IT 60388-45-6

(reaction of, with dichlorodimethylstannane)

RN 60388-45-6 ZCAPLUS

CN Propanoic acid, 3-[(mercaptoacetyl)oxy]-, mercaptomethyl ester (9CI)
(CA INDEX NAME)



IT 51287-84-4P

(prepn. of, for stabilizers for resins)

IT 60388-45-6

(reaction of, with dichlorodimethylstannane)

L48 ANSWER 31 OF 33 ZCAPLUS. COPYRIGHT 2003 ACS on STN

1976:479039 Document No. 85:79039 Sulfur-containing organotin compounds. Kugele, Thomas G.; Koeniger, Arthur F. (Cincinnati Malacron Chemicals, Inc., USA). Ger. Offen. DE 2550507 19760520, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2550507 19751111.

AB Compds. (23) such as (ROCH₂CH₂S)₂SnMeR₁SnMe(SCH₂CH₂OR)₂ (I) with R = octanoyl, oleoly, or octadecyl and R₁ = SCH₂CH₂O₂C(CH₂)₄CO₂CH₂CH₂S, SCH₂CH₂O₂CCH₂CH₂S, O₂CCH:CHCO₂ (cis), SCH₂CH₂S, or similar group were prepd. for use as heat stabilizers in PVC [9002-86-2]. Thus, 0.5 mole MeSnCl₃ [993-16-8] in water was treated with 1 mole HSCH₂CH₂O₂C(CH₂)₇H [57813-59-9], aq. NaOH, 0.25 mole bis(2-mercaptoethyl) adipate [15196-22-2], and aq NaOH to prepare I (R = octanoyl, R₁ = SCH₂CH₂O₂C(CH₂)₄CO₂CH₂CH₂S) (II) [59970-58-0]. PVC contg. II had better heat stability than PVC contg. the organotin isooctyl thioglycolate.

IT 59970-53-5 59970-56-8 59970-57-9

59970-58-0 59970-60-4 59970-61-5

59970-62-6 59970-63-7 59970-64-8

59970-65-9 59970-66-0 59970-67-1

59970-68-2 59970-69-3 59970-70-6

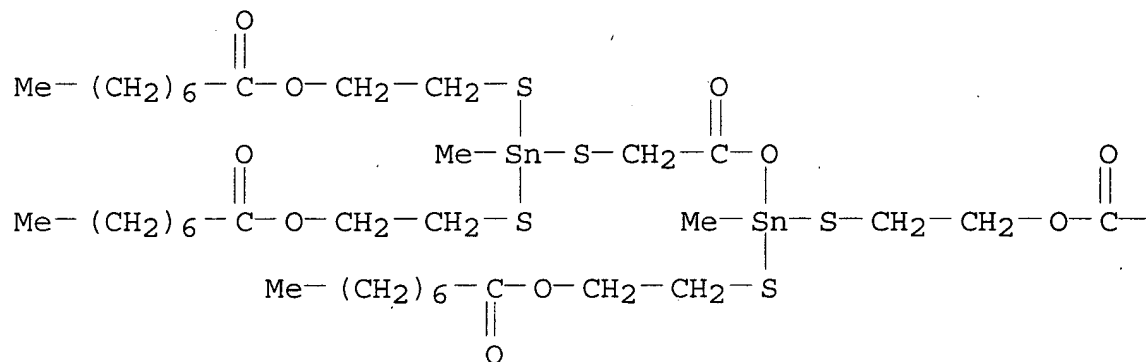
60003-88-5

(heat stabilizers, for PVC)

RN 59970-53-5 ZCAPLUS

CN Octanoic acid, 4,9-dimethyl-6-oxo-4,9-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-5-oxa-3,10-dithia-4,9-distannadodecane-1,12-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

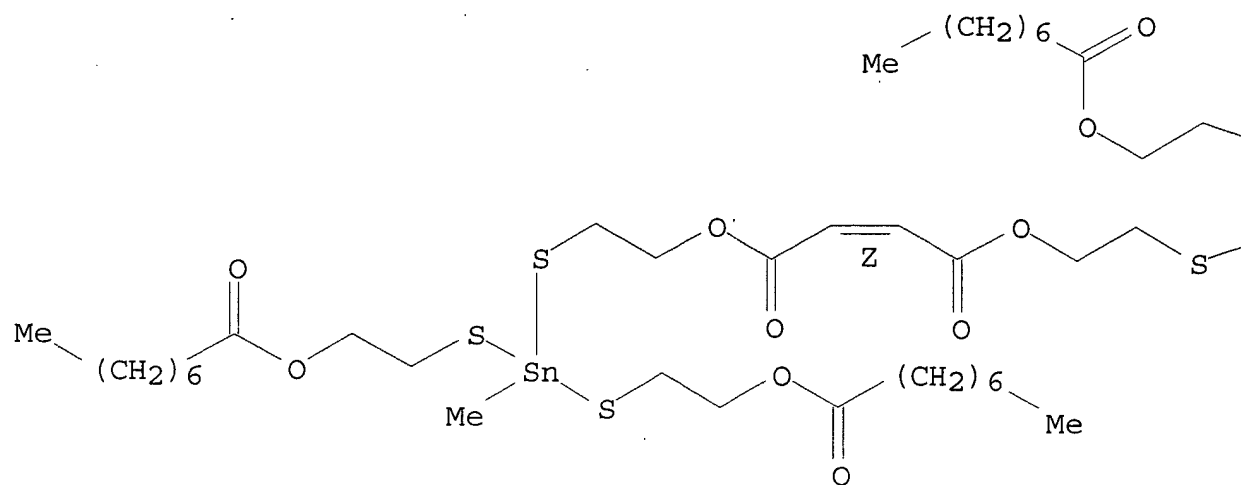
— (CH₂)₆—Me

RN 59970-56-8 ZCAPLUS

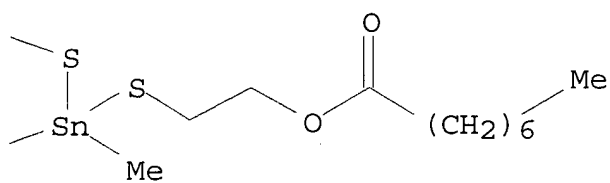
CN 2-Butenedioic acid (2Z)-, bis[4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stanna-hexadec-1-yl] ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



RN 59970-57-9 ZCAPLUS

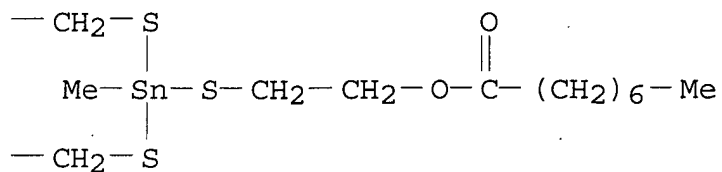
CN 9-Oxa-4,6-dithia-5-stannaheptadecanoic acid, 5-methyl-10-oxo-5-[[2-[(1-oxooctyl)oxy]ethyl]thio]-, 4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stanna-hexadec-1-yl ester (9CI) (CA INDEX NAME)

$$\begin{array}{ccccccc}
 & & \text{O} & & & & \\
 & & || & & & & \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} & & & & \text{O} & & \\
 & & & & || & & \\
 & & & & \text{O} & & \\
 & & & & || & & \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} & & \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} & & & & \\
 & & & & & & \\
 & & & & \text{O} & & \\
 & & & & || & & \\
 & & & & \text{O} & & \\
 & & & & || & & \\
 & & & & \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} & & \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-
 \end{array}$$
$$-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}{\text{C}}-(\text{CH}_2)_6-\text{Me}$$

RN	59970-58-0	ZCAPLUS
CN	Hexanedioic acid, bis[4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl] ester (9CI) (CA INDEX NAME)	

$$\begin{array}{c}
 \text{O} \\
 \parallel \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 \parallel \qquad \qquad \qquad | \\
 \text{O} \qquad \qquad \qquad \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}-\text{(CH}_2)_4-\text{C}-\text{O}-\text{CH}_2- \\
 \parallel \qquad \qquad \qquad \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \qquad \qquad \qquad \text{O} \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S}
 \end{array}$$

PAGE 1-B

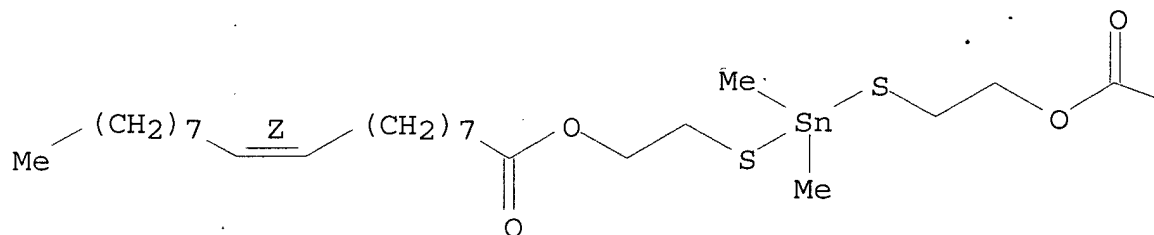


RN 59970-60-4 ZCAPLUS

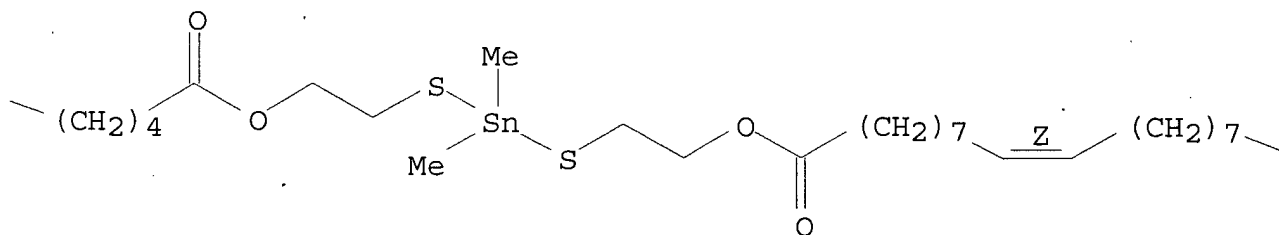
CN Hexanedioic acid, bis(4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl) ester, (Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



PAGE 1-C

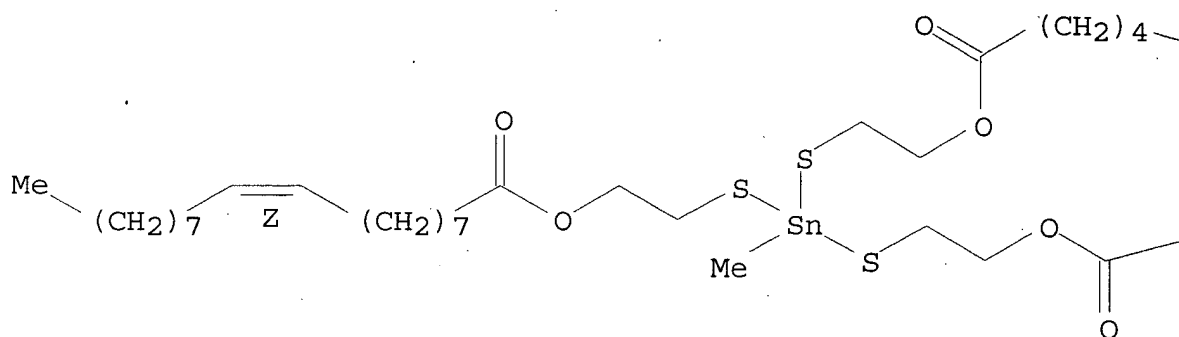
Me

RN 59970-61-5 ZCAPLUS

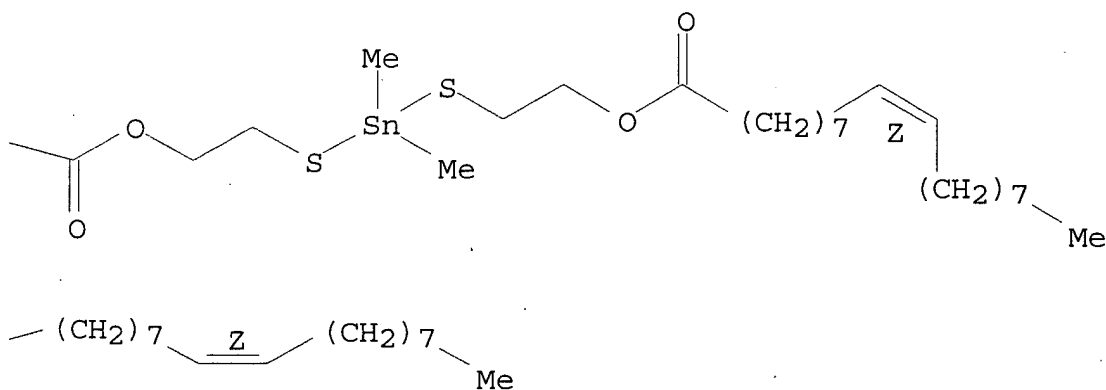
CN Hexanedioic acid, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl 4-methyl-9-oxo-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



RN 59970-62-6 ZCAPLUS

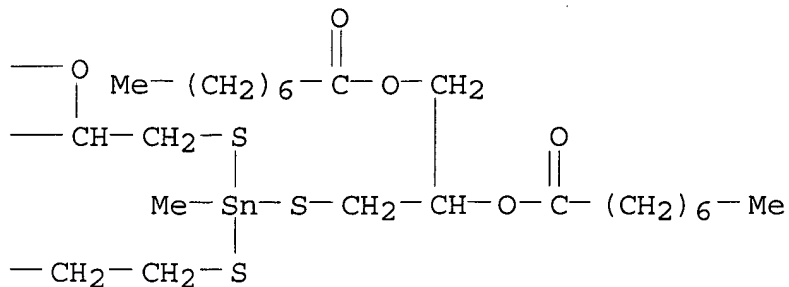
CN Hexanedioic acid, bis[4-methyl-4-[[2-(octadecyloxy)ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-1-yl] ester (9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{Me}-(\text{CH}_2)_{17}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\ | \\ \text{Me}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\overset{\text{O}}{\parallel}{\text{C}}-(\text{CH}_2)_4-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{CH}_2- \\ | \\ \text{Me}-(\text{CH}_2)_{17}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \end{array}$$
$$\begin{array}{c} \text{S}-\text{CH}_2-\text{CH}_2-\text{O}-(\text{CH}_2)_{17}-\text{Me} \\ | \\ -\text{CH}_2-\text{S}-\text{Sn}-\text{Me} \\ | \\ \text{S}-\text{CH}_2-\text{CH}_2-\text{O}-(\text{CH}_2)_{17}-\text{Me} \end{array}$$

RN	59970-63-7	ZCAPLUS
CN	Hexanedioic acid, bis[4-[[2,3-bis[(1-oxooctyl)oxy]propyl]thio]-4-methyl-10-oxo-7-[(1-oxooctyl)oxy]-9-oxa-3,5-dithia-4-stannaheptadec-1-yl] ester (9CI) (CA INDEX NAME)	

[illegible]

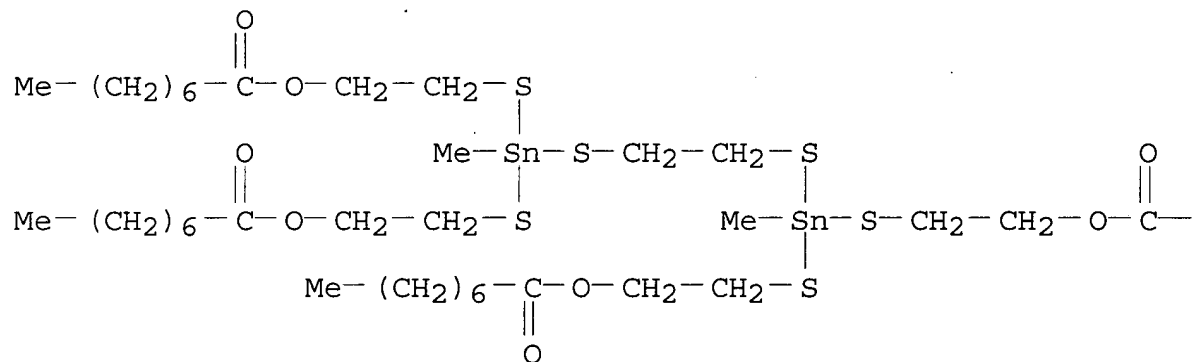
PAGE 1-B



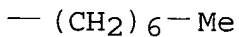
RN 59970-64-8 ZCAPLUS

CN Octanoic acid, 4,9-dimethyl-4,9-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,8,10-tetrathia-4,9-distannadodecane-1,12-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



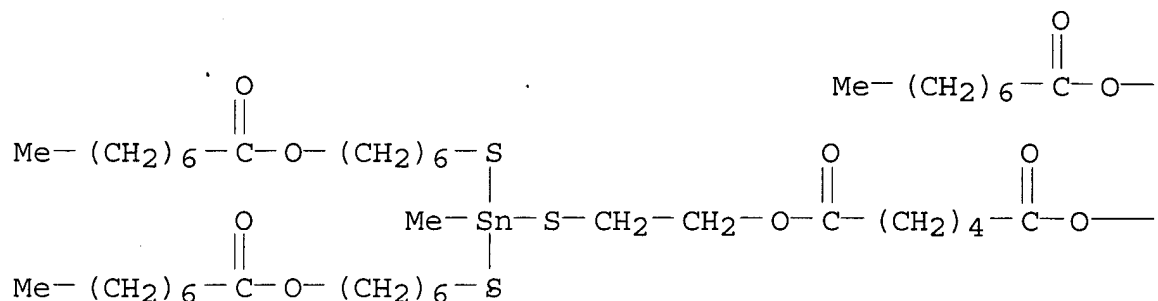
PAGE 1-B



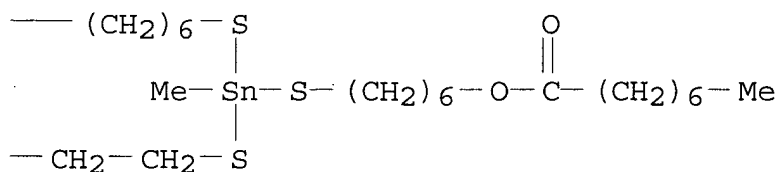
RN 59970-65-9 ZCAPLUS

CN Hexanedioic acid, bis[4-methyl-13-oxo-4-[[6-[(1-oxooctyl)oxy]hexyl]thio]-12-oxa-3,5-dithia-4-stannaeicos-1-yl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

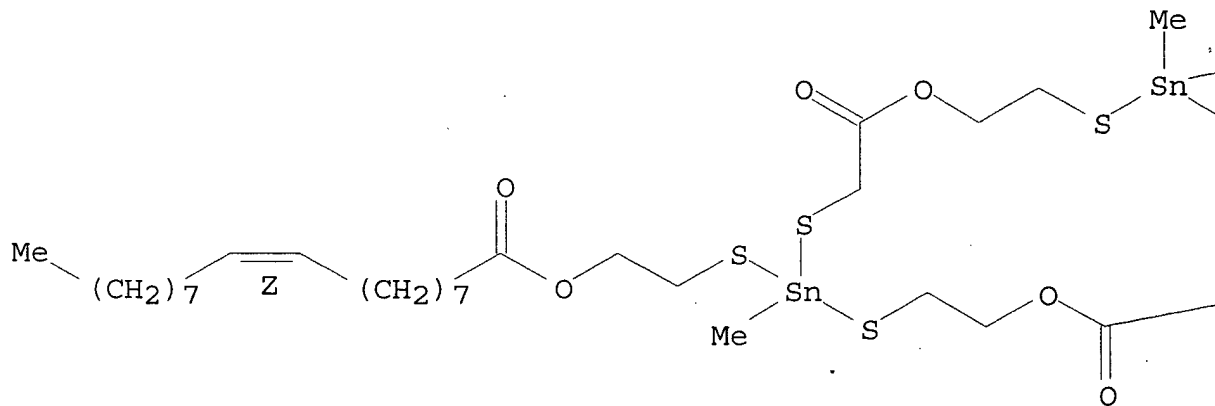


RN 59970-66-0 ZCAPLUS

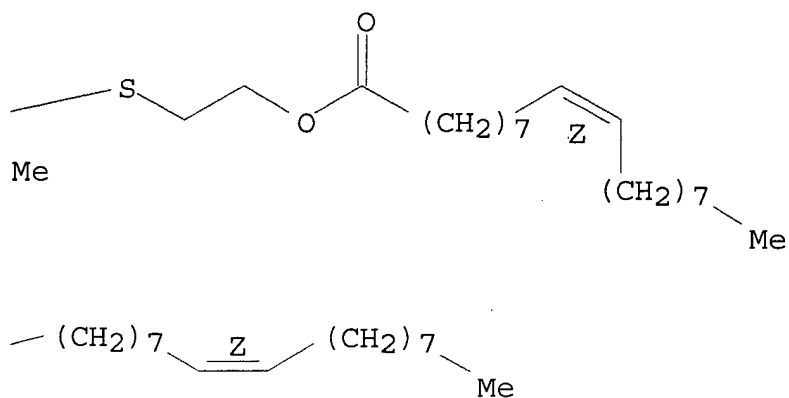
CN 8-Oxa-3,5-dithia-4-stannahexacos-17-enoic acid, 4-methyl-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

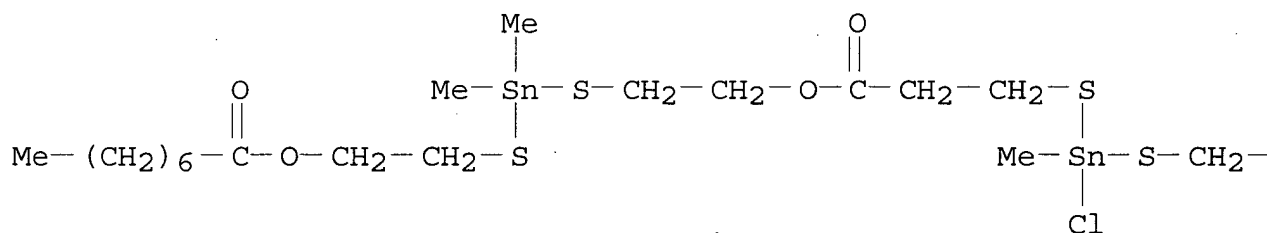


PAGE 1-B

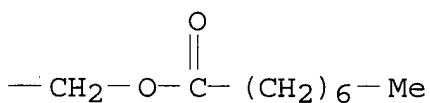


RN 59970-67-1 ZCAPLUS
 CN 9-Oxa-4,6-dithia-5-stannaheptadecanoic acid, 5-chloro-5-methyl-10-oxo-, 4,4-dimethyl-9-oxo-8-oxa-3,5-dithia-4-stannahexadec-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 59970-68-2 ZCAPLUS
 CN Hexanedioic acid, bis[4-butyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl] ester (9CI) (CA INDEX NAME)

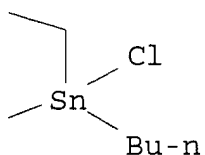
$$\begin{array}{c}
 \text{O} \\
 \parallel \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 \parallel \\
 \text{O} \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \text{n-Bu}-\text{Sn}-\text{S}-\text{CH}_2-\text{CH}_2-\text{O}-\text{C}-(\text{CH}_2)_4-\text{C}-\text{O}-\text{CH}_2- \\
 \parallel \qquad \qquad \qquad \parallel \\
 \text{O} \qquad \qquad \qquad \text{O} \\
 \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-\text{CH}_2-\text{S} \qquad \text{Me}-(\text{CH}_2)_6-\text{C}-\text{O}-\text{CH}_2-
 \end{array}$$
$$\begin{array}{c} \text{---CH}_2\text{---S} \\ | \\ \text{n-Bu---Sn---S---CH}_2\text{---CH}_2\text{---O---C(=O)---(CH}_2\text{)}_6\text{---Me} \\ | \\ \text{---CH}_2\text{---S} \end{array}$$

CN 2-Butenedioic acid (2Z)-, 4-butyl-4-chloro-9-oxo-8-oxa-3,5-dithia-4-stannahexadec-1-yl 4-butyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexadec-1-yl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

[illegible]

PAGE 1-B

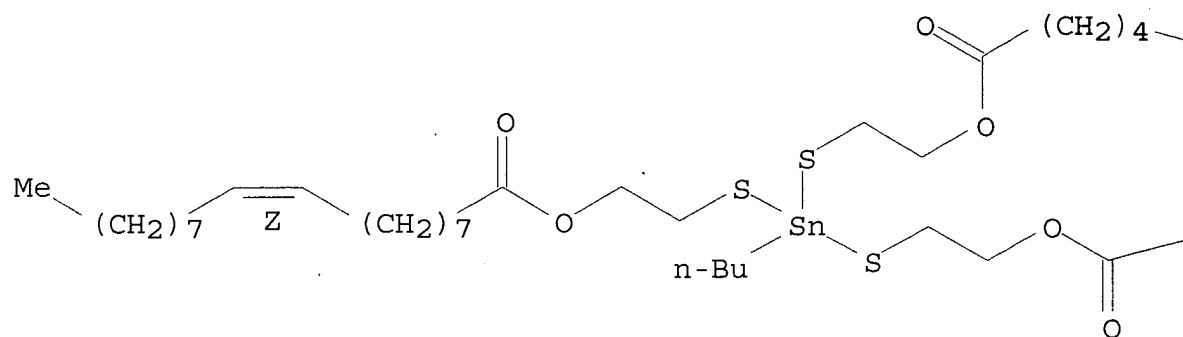


RN 59970-70-6 ZCAPLUS

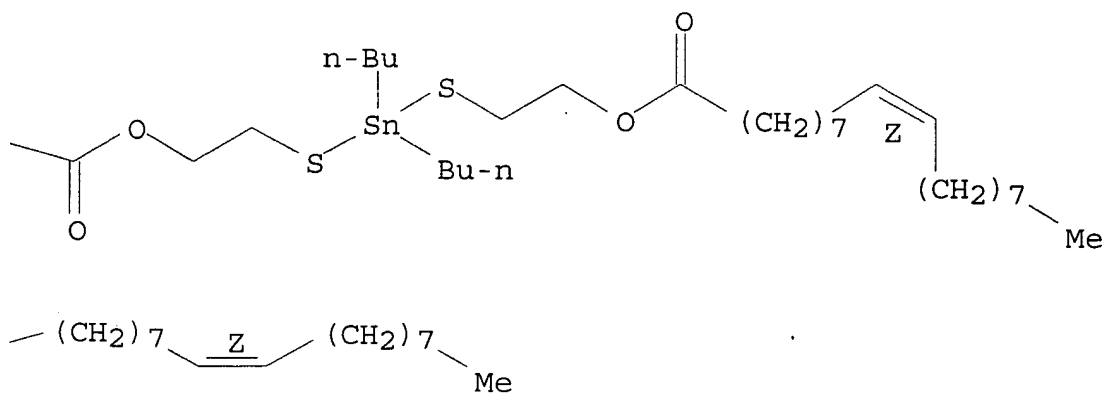
CN Hexanedioic acid, 4-butyl-9-oxo-4-[[2-[(1-oxo-9-octadecenyl)oxy]ethyl]thio]-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl 4,4-dibutyl-9-oxo-8-oxa-3,5-dithia-4-stannahexacos-17-en-1-yl ester, (Z,Z,Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

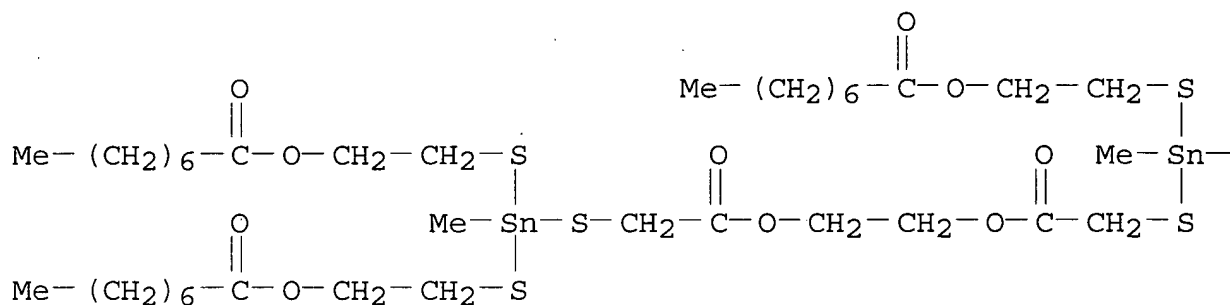


PAGE 1-B

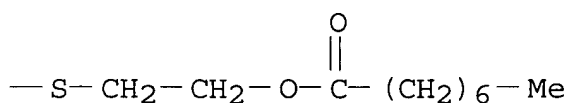


RN 60003-88-5 ZCAPLUS
 CN 8-Oxa-3,5-dithia-4-stannaheptadecanoic acid, 4-methyl-9-oxo-4-[[2-[(1-oxooctyl)oxy]ethyl]thio]-, 1,2-ethanediyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

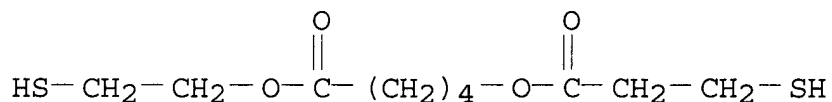


IT 15196-22-2 28772-22-7 38705-47-4
 57813-59-9 59118-78-4 59119-10-7
 59970-59-1

(reaction of, with organotin chlorides).

RN 15196-22-2 ZCAPLUS
 CN Pentanoic acid, 5-(3-mercapto-1-oxopropoxy)-, 2-mercaptoethyl ester

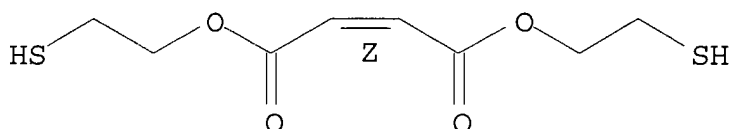
(9CI) (CA INDEX NAME)



RN 28772-22-7 ZCAPLUS

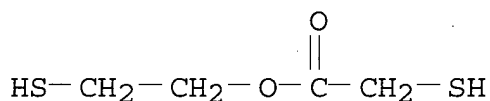
CN 2-Butenedioic acid (2Z)-, bis(2-mercaptoethyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



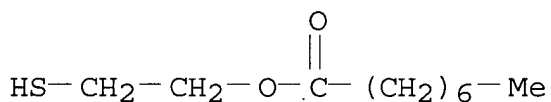
RN 38705-47-4 ZCAPLUS

CN Acetic acid, mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

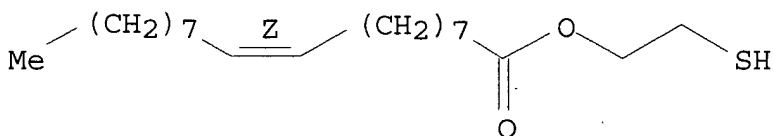
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

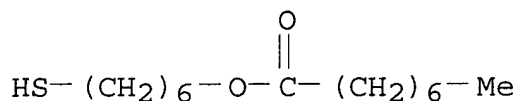
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



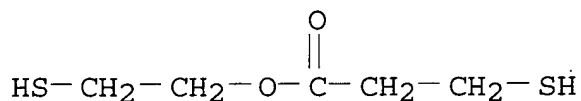
RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



RN 59970-59-1 ZCAPLUS

CN Propanoic acid, 3-mercapto-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



IT 59970-53-5 59970-56-8 59970-57-9
 59970-58-0 59970-60-4 59970-61-5
 59970-62-6 59970-63-7 59970-64-8
 59970-65-9 59970-66-0 59970-67-1
 59970-68-2 59970-69-3 59970-70-6
 60003-88-5

(heat stabilizers, for PVC)

IT 15196-22-2 28772-22-7 38705-47-4
 57813-59-9 59118-78-4 59119-10-7
 59970-59-1

(reaction of, with organotin chlorides)

L48 ANSWER 32 OF 33 ZCAPLUS COPYRIGHT 2003 ACS on STN

1976:181132 Document No. 84:181132 Organotin compounds and their use as stabilizers. Kugele, Thomas G. (Cincinnati Milacron, Inc., USA). Ger. Offen. DE 2531308 19760205, 81 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2531308 19750712.

AB Esters of alkyl[(hydroxyalkyl)thio]tin compds. contg. 1-2 C1-20 hydrocarbonyl groups or their sulfides are heat stabilizers for PVC [9002-86-2] with improved storage stability. Thus, adding 40 g 50% NaOH dropwise to 110 g Me₂SnCl₂ [753-73-1] and 109 g C₈H₁₇CO₂CH₂CH₂SH [30982-97-9] stirred in 200 ml H₂O at 30-40.degree., stirring 1 hr, adding 32.5 g 60% Na₂S [1313-82-2] dropwise at 25-35.degree., and stirring 1 hr at 35.degree. gives 95.5% (C₈H₁₇CO₂CH₂CH₂SSnMe₂)₂S (I) [59119-13-0]. Compounded PVC (Geon 103EP) contg. I equiv. to 150 mg Sn/100 g has color (10 = colorless, 5 = orange-brown, 0 = blackened) >9, >7, 6, 5, 4, 3, and 2 after being calendered 1, 4, 6, 7, 8, 9, and 10 min, resp., at 193.degree..

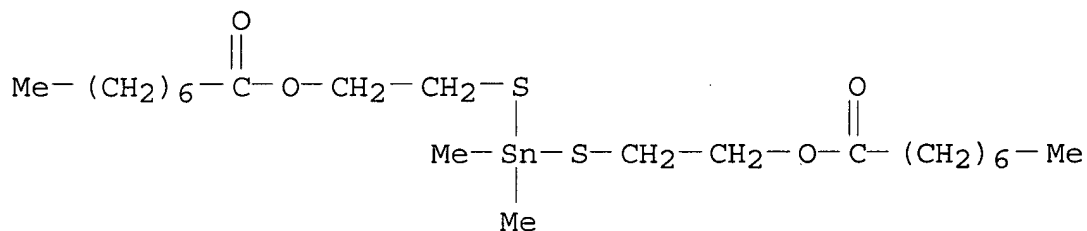
IT 57813-60-2 57813-62-4 59118-76-2
 59118-77-3 59118-79-5 59118-80-8
 59118-81-9 59118-82-0 59118-85-3
 59118-89-7 59118-90-0 59118-91-1
 59118-95-5 59118-96-6 59118-97-7
 59118-98-8 59118-99-9 59119-00-5

59119-01-6 59119-03-8 59119-04-9
 59119-05-0 59119-07-2 59119-13-0
 59126-14-6 59126-15-7 59126-17-9
 59138-44-2 59138-46-4 59158-79-1
 59158-80-4 59213-33-1

(heat stabilizers, for PVC)

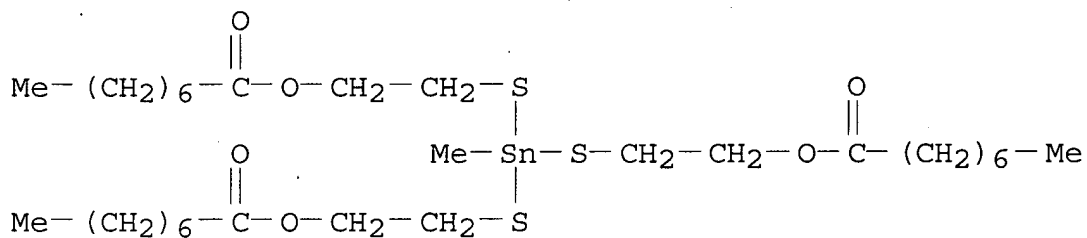
RN 57813-60-2 ZCAPLUS

CN Octanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



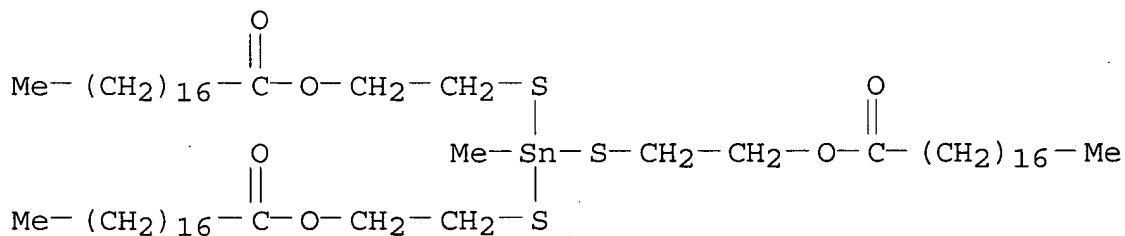
RN 57813-62-4 ZCAPLUS

CN Octanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester
 (9CI) (CA INDEX NAME)



RN 59118-76-2 ZCAPLUS

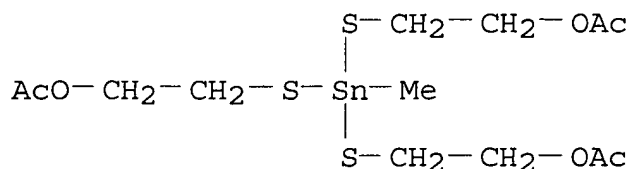
CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl)
 ester (9CI) (CA INDEX NAME)



RN 59118-77-3 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, triacetate

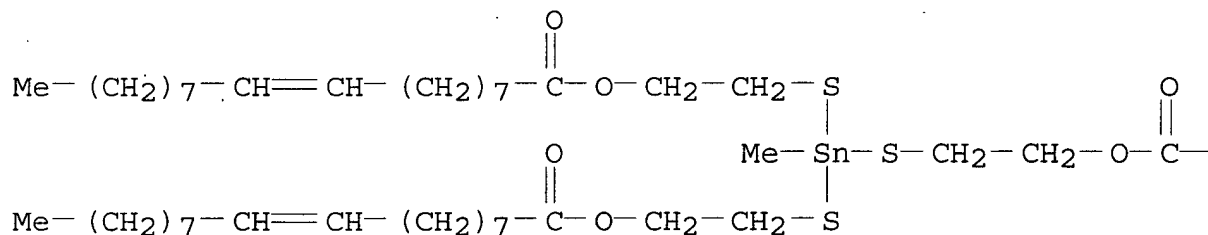
(9CI) (CA INDEX NAME)



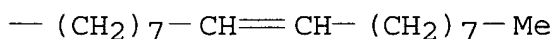
RN 59118-79-5 ZCAPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

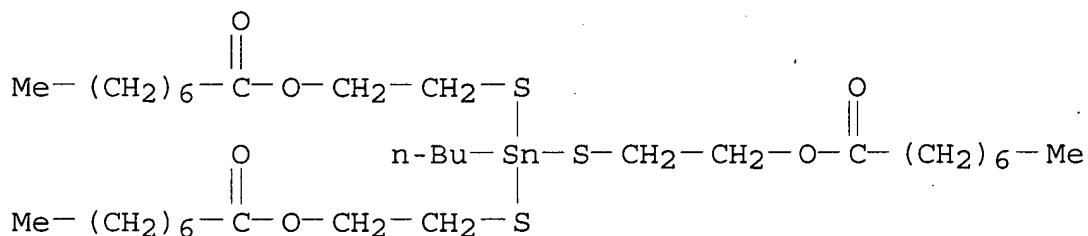


PAGE 1-B



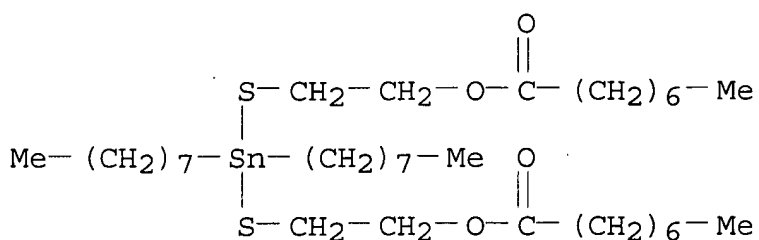
RN 59118-80-8 ZCAPLUS

CN Octanoic acid, (butylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



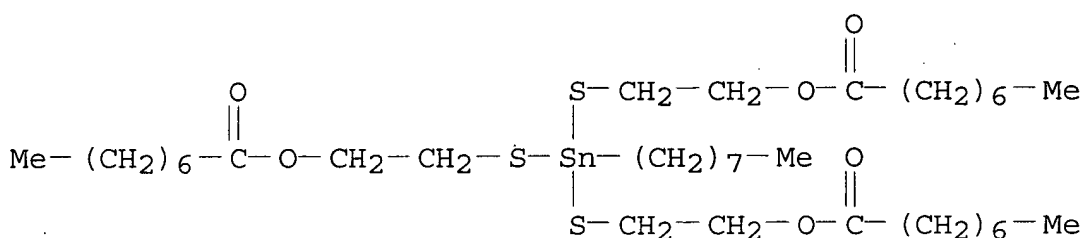
RN 59118-81-9 ZCAPLUS

CN Octanoic acid, (dioctylstannylene)bis(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



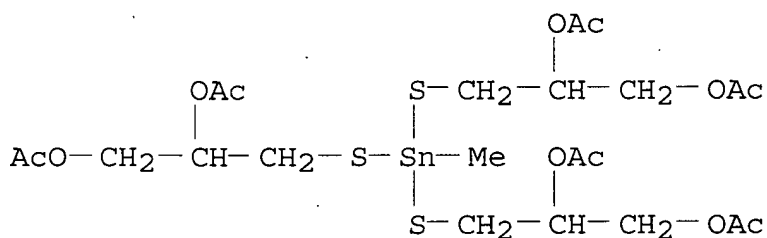
RN 59118-82-0 ZCAPLUS

CN Octanoic acid, (octylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



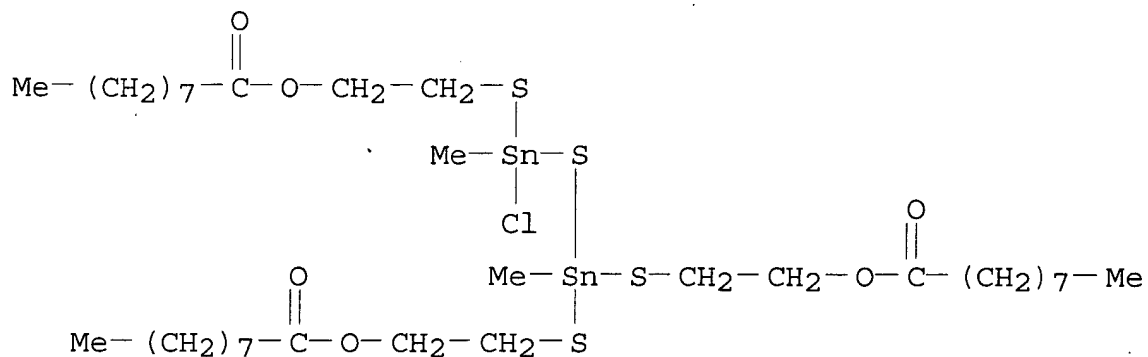
RN 59118-85-3 ZCAPLUS

CN 3-Oxa-7,9-dithia-8-stannadodecane-5,11,12-triol,
8-[3-(acetyloxy)propyl]thio]-8-methyl-2-oxo-, triacetate (9CI) (CA
INDEX NAME)



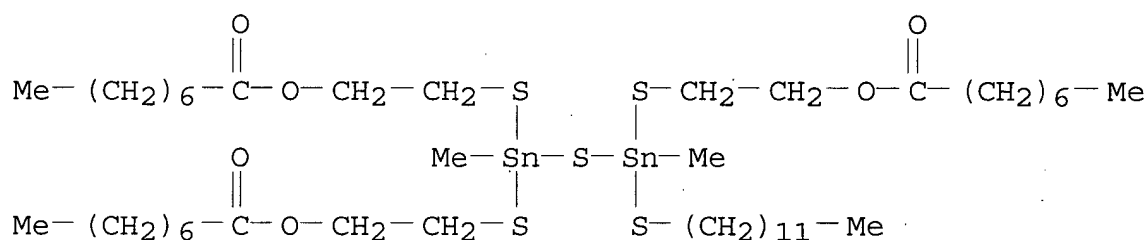
RN 59118-89-7 ZCAPLUS

CN Nonanoic acid, (1-chloro-1,3-dimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



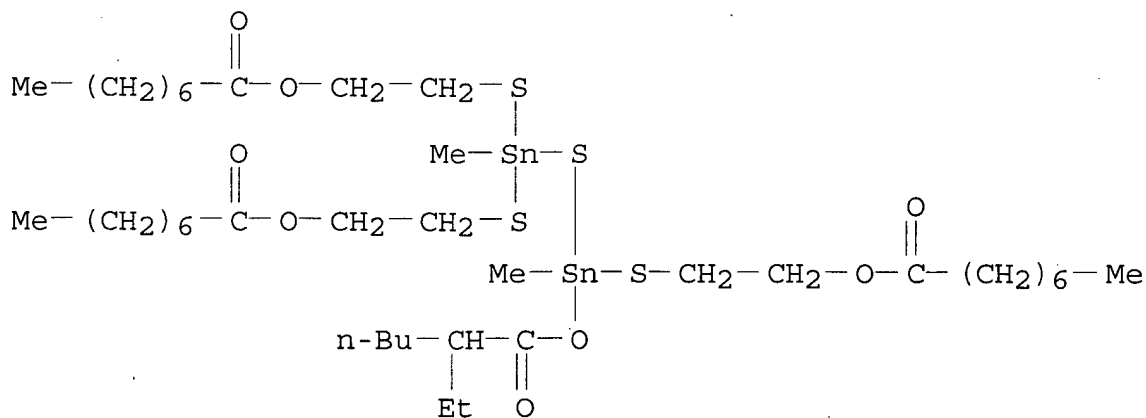
RN 59118-90-0 ZCAPLUS

CN Octanoic acid, [1-(dodecylthio)-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59118-91-1 ZCAPLUS

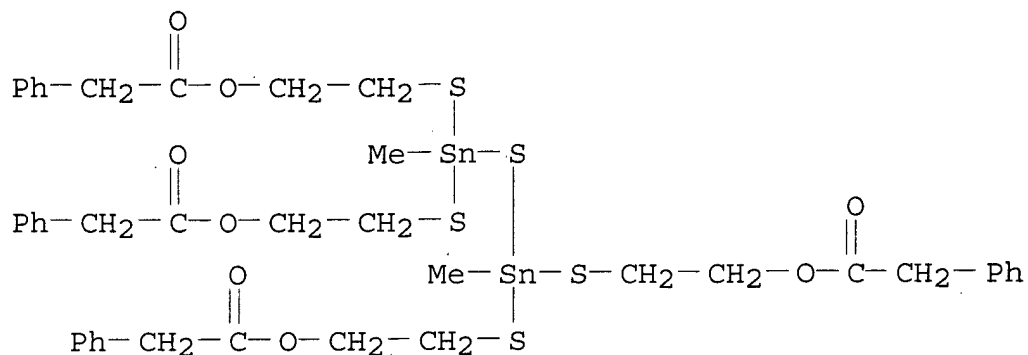
CN Octanoic acid, [1-[(2-ethyl-1-oxohexyl)oxy]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59118-95-5 ZCAPLUS

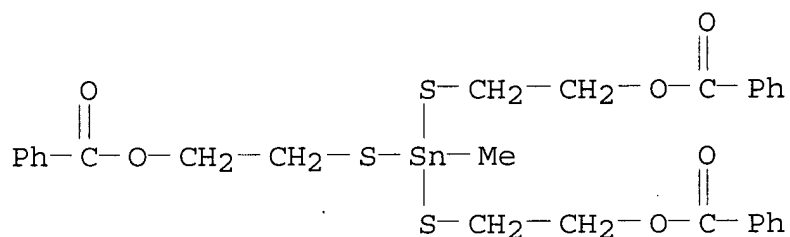
CN Benzeneacetic acid, (1,3-dimethyl-1,3-distannathianediylidene) tetrak

is(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



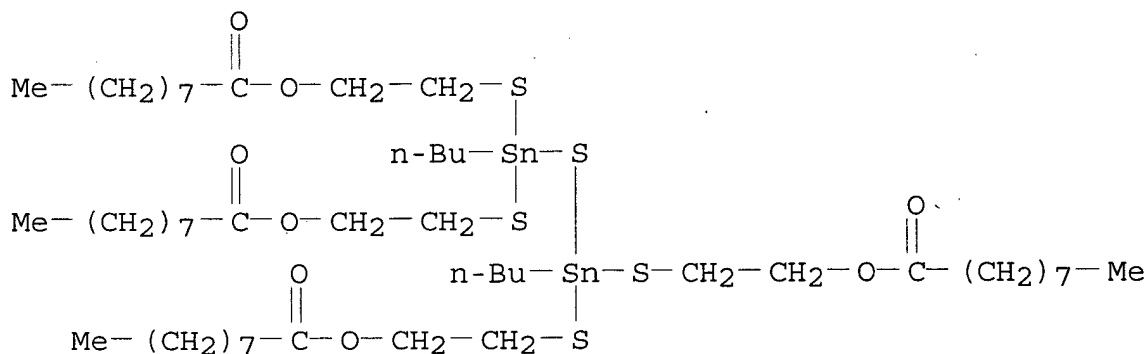
RN 59118-96-6 ZCAPLUS

CN Ethanol, 2,2',2''-[(methylstannylidyne)tris(thio)]tris-, tribenzoate (9CI) (CA INDEX NAME)



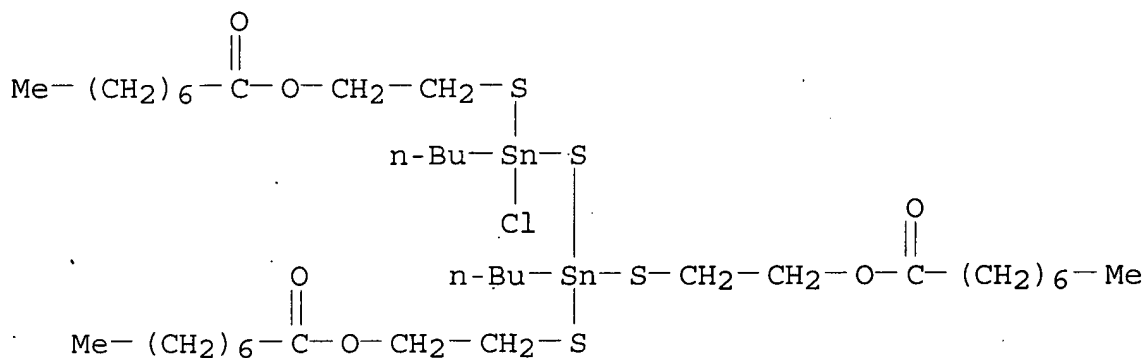
RN 59118-97-7 ZCAPLUS

CN Nonanoic acid, (1,3-dibutyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59118-98-8 ZCAPLUS

CN Octanoic acid, (1,3-dibutyl-1-chloro-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

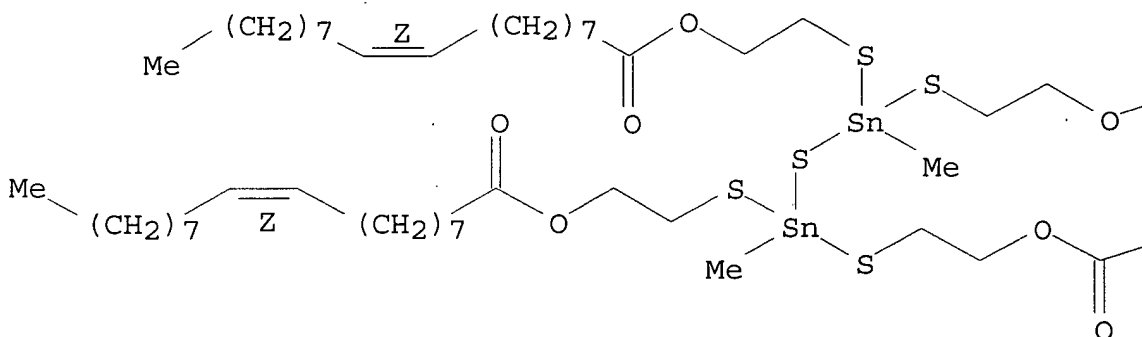


RN 59118-99-9 ZCAPLUS

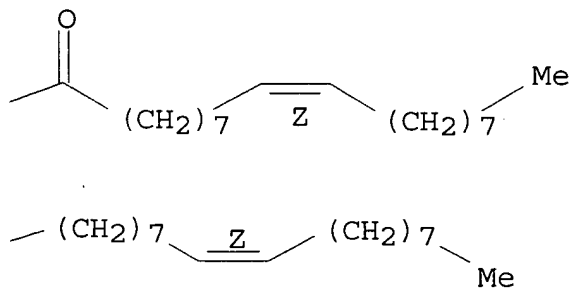
9-Octadecenoic acid (9Z)-, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



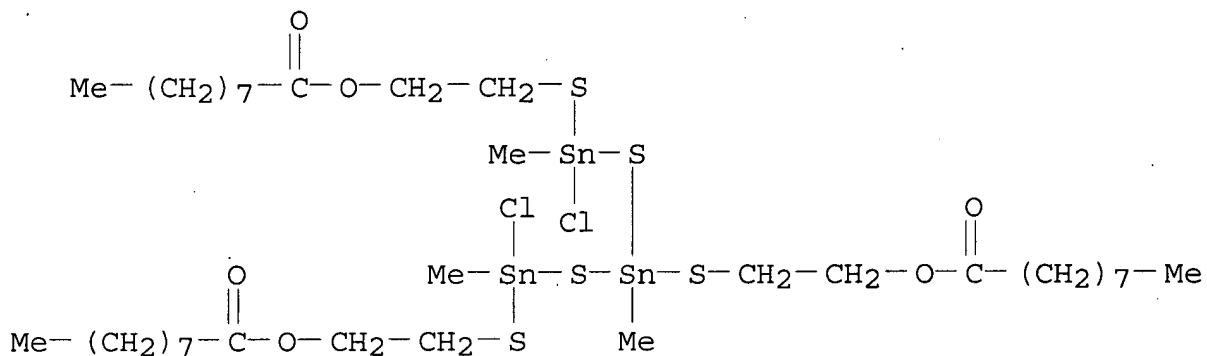
PAGE 1-B



RN 59119-00-5 ZCAPLUS

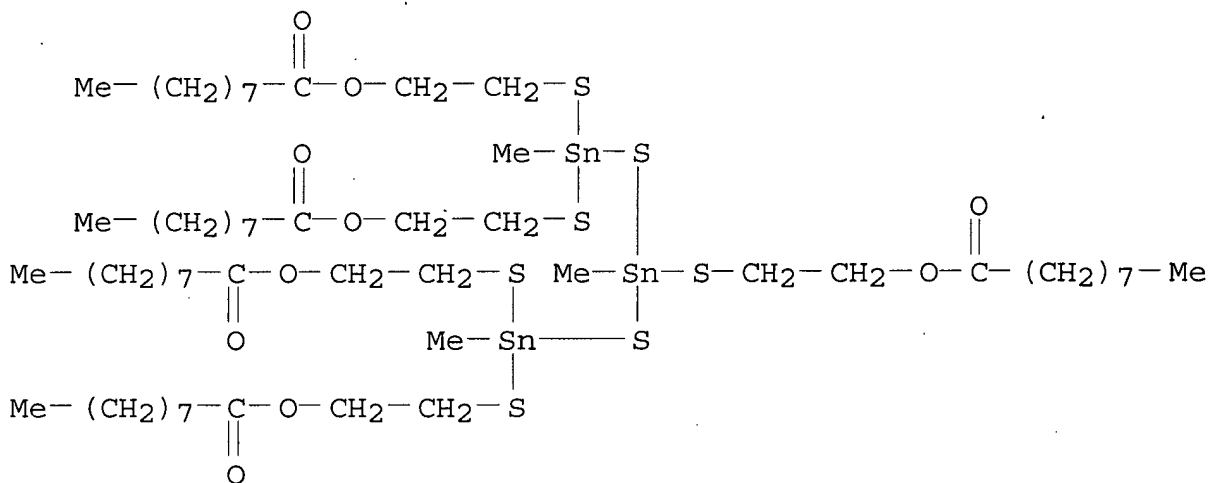
CN	Nonanoic acid, (1,5-dichloro-1,3,5-trimethyl-1,3,5-
----	---

tristannathianetriyl) tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



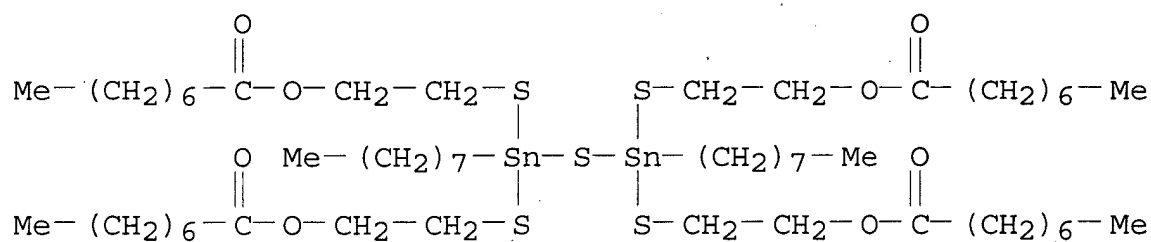
RN 59119-01-6 ZCAPLUS

CN Nonanoic acid, (1,3,5-trimethyl-3-tristannathianyl-1,5-diylidene)pentakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59119-03-8 ZCAPLUS

CN Octanoic acid, (1,3-dioctyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

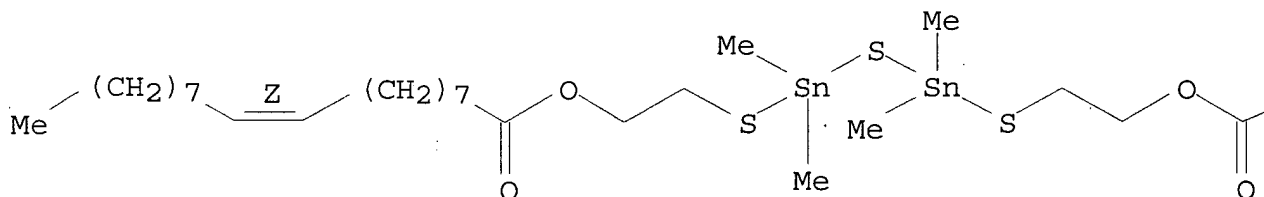


RN 59119-04-9 ZCAPLUS

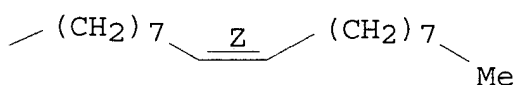
CN 9-Octadecenoic acid (9Z)-, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

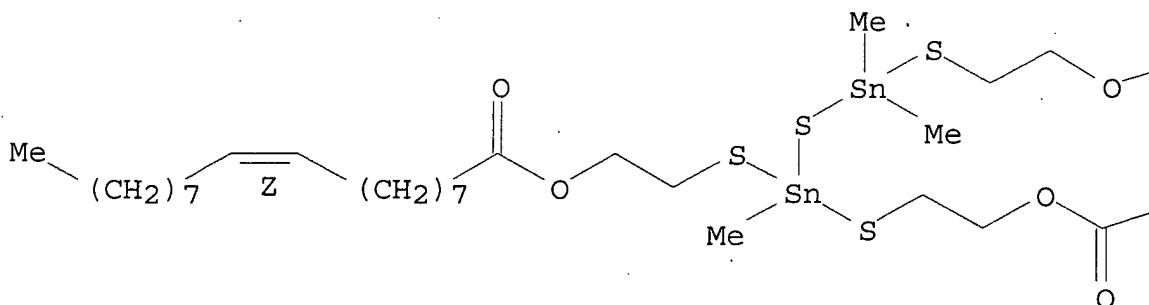


RN 59119-05-0 ZCAPLUS

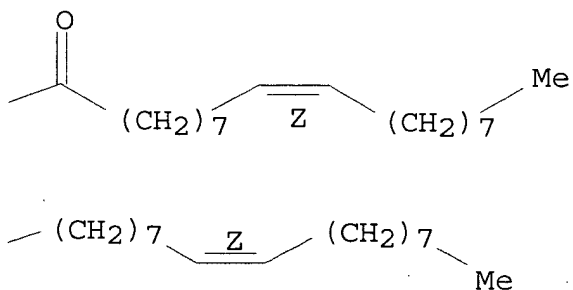
CN 9-Octadecenoic acid (9Z)-, (1,1,3-trimethyl-1-distannathianyl-3-ylidene)tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

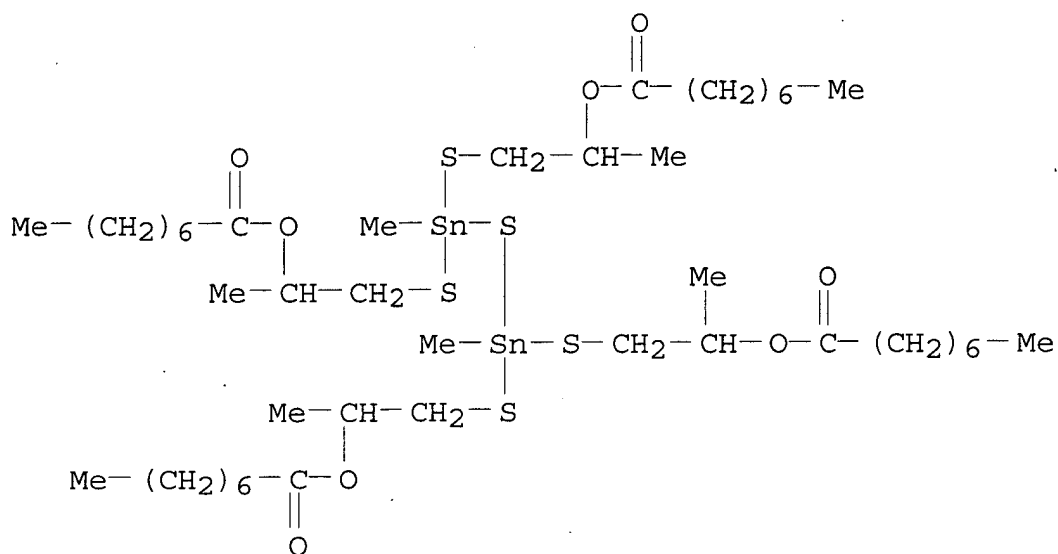
PAGE 1-A



PAGE 1-B

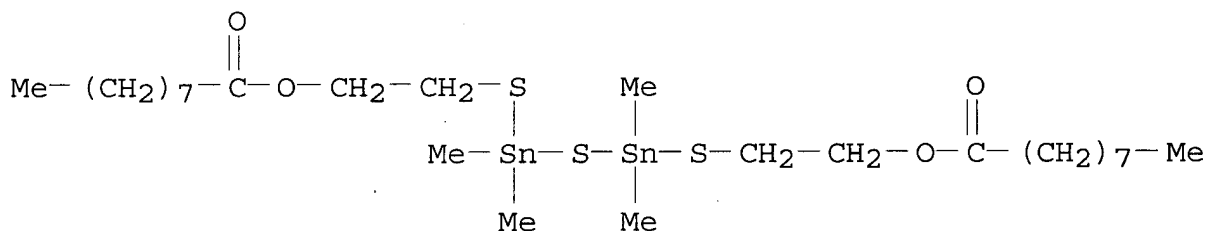


RN 59119-07-2 ZCAPLUS
 CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis[thio(1-methyl-2,1-ethanediyl)] ester (9CI) (CA INDEX NAME)



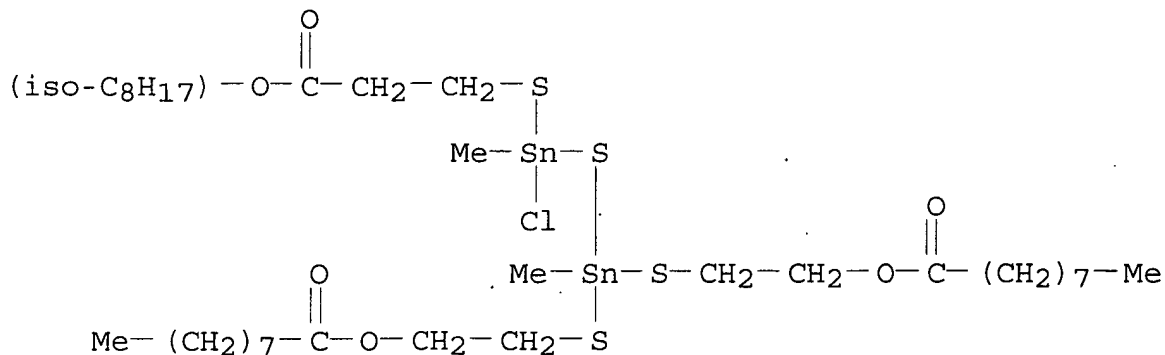
RN 59119-13-0 ZCAPLUS

CN Nonanoic acid, (1,1,3,3-tetramethyl-1,3-distannathianediyl)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



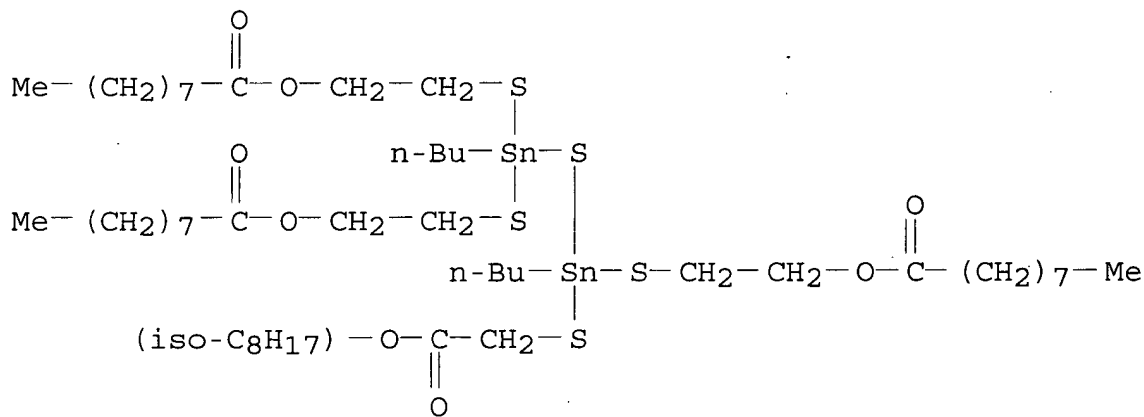
RN 59126-14-6 ZCAPLUS

CN Nonanoic acid, [3-chloro-3-[[3-(isooctyloxy)-3-oxopropyl]thio]-1,3-dimethyldistannathianylidene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



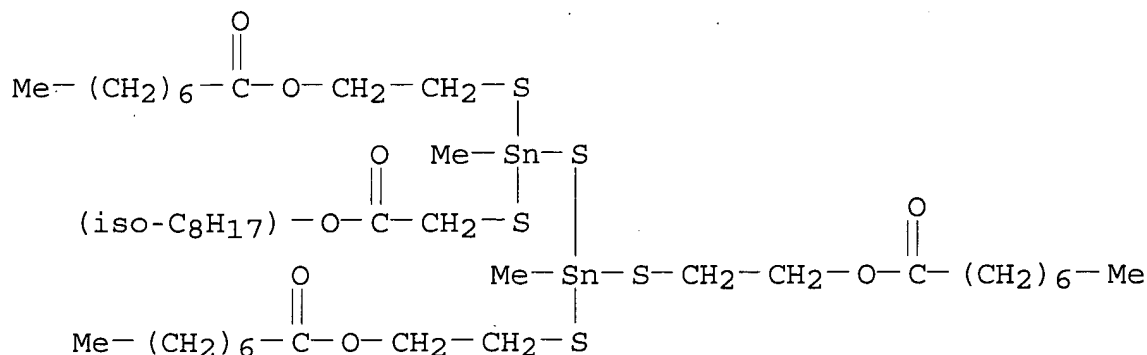
RN 59126-15-7 ZCAPLUS

CN Nonanoic acid, [1,3-dibutyl-1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



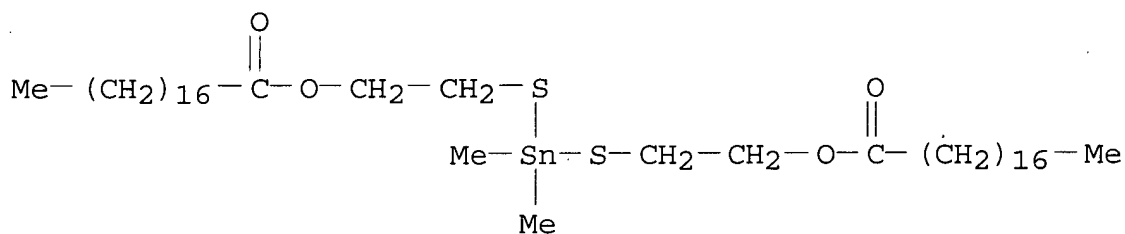
RN 59126-17-9 ZCAPLUS

CN Octanoic acid, [1-[[2-(isooctyloxy)-2-oxoethyl]thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



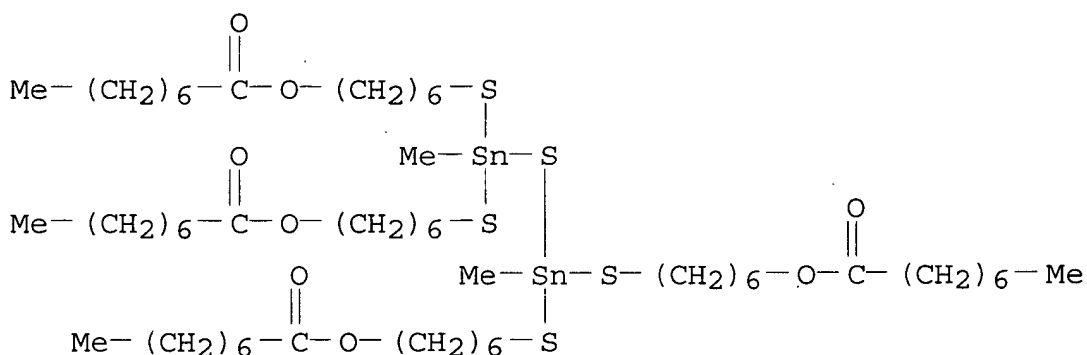
RN 59138-44-2 ZCAPLUS

CN Octadecanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



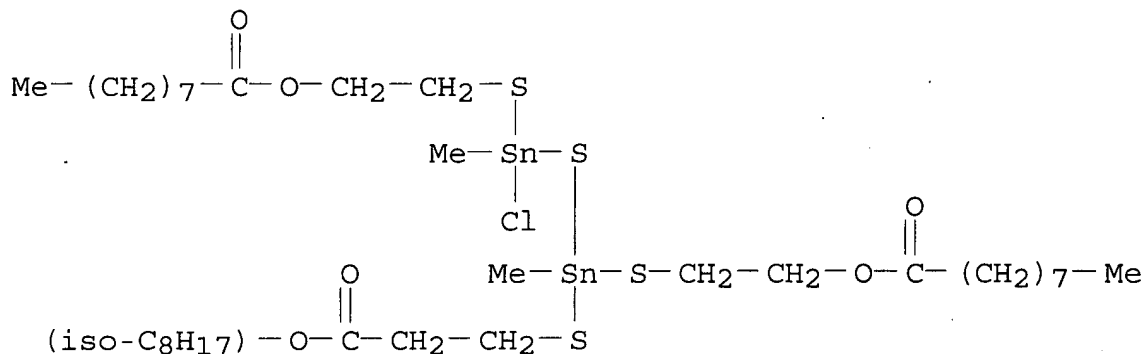
RN 59138-46-4 ZCAPLUS

CN Octanoic acid, [(1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio)]tetra-6,1-hexanediyl ester (9CI) (CA INDEX NAME)



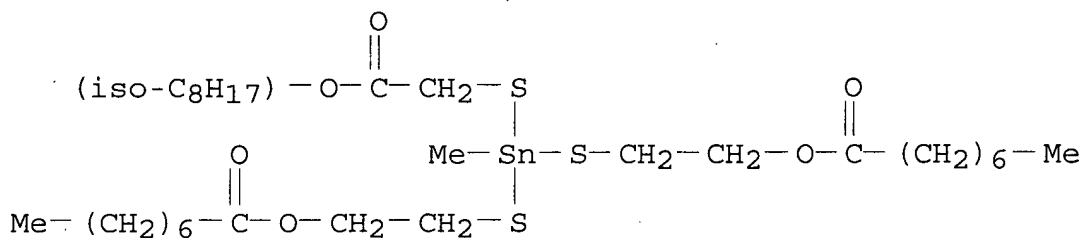
RN 59158-79-1 ZCAPLUS

CN 11-Oxa-4,6,8-trithia-7-stannaeicosanoic acid, 7-chloro-5,7-dimethyl-12-oxo-5-[[2-[(1-oxononyl)oxy]ethyl]thia]-, isooctyl ester (9CI) (CA INDEX NAME)



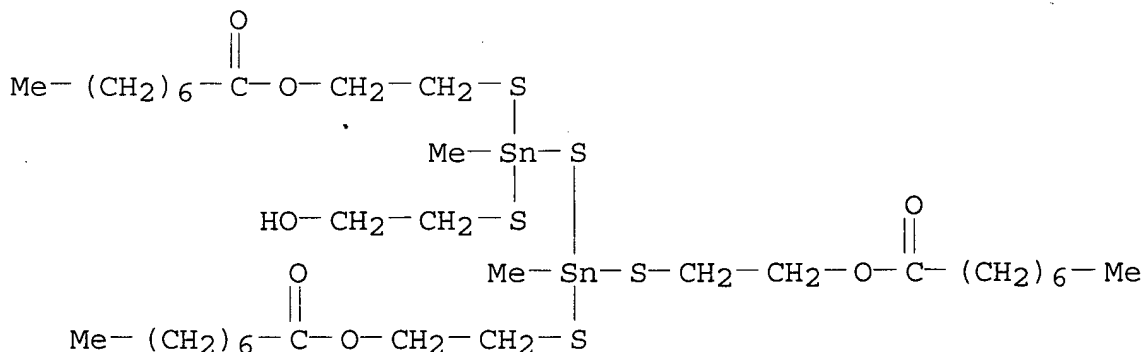
RN 59158-80-4 ZCAPLUS

CN Octanoic acid, [[[2-(isooctyloxy)-2-oxoethyl]thio]methylstannylene]bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



RN 59213-33-1 ZCAPLUS

CN Octanoic acid, [1-[(2-hydroxyethyl)thio]-1,3-dimethyl-1-distannathianyl-3-ylidene]tris(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



IT 5862-40-8 27564-01-8 30982-97-9

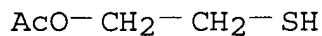
50627-04-8 57813-59-9 59118-78-4

59118-94-4 59119-06-1 59119-10-7

(reaction of, with chlorostannanes)

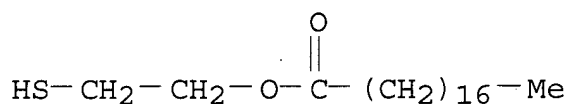
RN 5862-40-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-acetate (8CI, 9CI) (CA INDEX NAME)



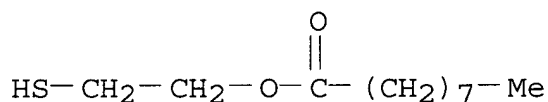
RN 27564-01-8 ZCAPLUS

CN Octadecanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



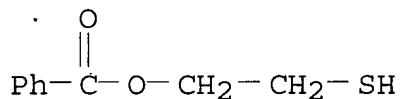
RN 30982-97-9 ZCAPLUS

CN Nonanoic acid, 2-mercaptoethyl ester (8CI, 9CI) (CA INDEX NAME)



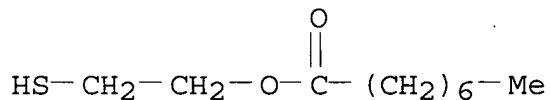
RN 50627-04-8 ZCAPLUS

CN Ethanol, 2-mercapto-, 1-benzoate (9CI) (CA INDEX NAME)



RN 57813-59-9 ZCAPLUS

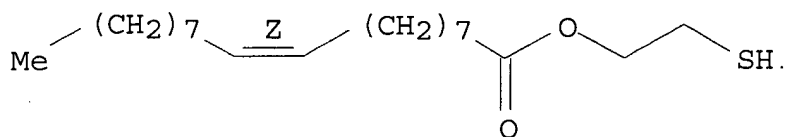
CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



RN 59118-78-4 ZCAPLUS

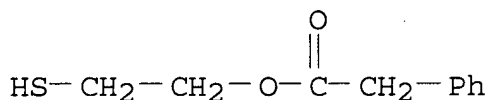
CN 9-Octadecenoic acid (9Z)-, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



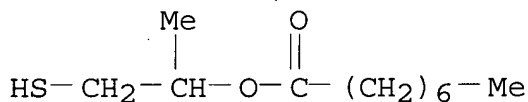
RN 59118-94-4 ZCAPLUS

CN Benzeneacetic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



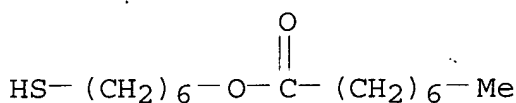
RN 59119-06-1 ZCAPLUS

CN Octanoic acid, 2-mercapto-1-methylethyl ester (9CI) (CA INDEX NAME)



RN 59119-10-7 ZCAPLUS

CN Octanoic acid, 6-mercaptohexyl ester (9CI) (CA INDEX NAME)



IT 57813-60-2 57813-62-4 59118-76-2
 59118-77-3 59118-79-5 59118-80-8
 59118-81-9 59118-82-0 59118-85-3
 59118-89-7 59118-90-0 59118-91-1
 59118-95-5 59118-96-6 59118-97-7
 59118-98-8 59118-99-9 59119-00-5
 59119-01-6 59119-03-8 59119-04-9
 59119-05-0 59119-07-2 59119-13-0
 59126-14-6 59126-15-7 59126-17-9
 59138-44-2 59138-46-4 59158-79-1
 59158-80-4 59213-33-1

(heat stabilizers, for PVC)

IT 5862-40-8 27564-01-8 30982-97-9
 50627-04-8 57813-59-9 59118-78-4
 59118-94-4 59119-06-1 59119-10-7
 (reaction of, with chlorostannanes)

1976:44363 Document No. 84:44363 Organotin mercaptides. Molt, Kenneth R. (Cincinnati Milacron Chemicals, Inc., USA). Ger. Offen. DE 2503554 19750911, 47 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1975-2503554 19750129.

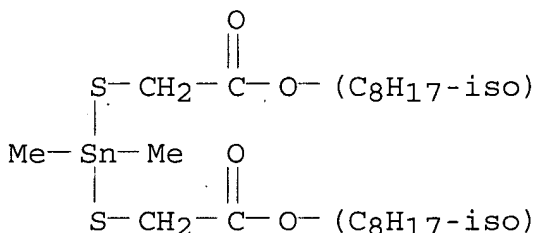
AB Approx. 20 methyltin thioethers, e.g., [(C₈H₁₇O₂CCH₂S)₂SnMe]₂S, MeSn(SCH₂CO₂C₈H₁₇)₃, [(C₇H₁₅CO₂CH₂CH₂S)₂SnMe]₂S, Me₂Sn(SCH₂Ph)SCH₂CO₂C₈H₁₇, etc. were prepd. E.g., Me₂SnCl₂ and Na₂S gave Me₂SnS, which, with ClCH₂CH₂O₂CC₇H₁₅, gave Me₂SnClSCH₂CH₂O₂CC₇H₁₅. This treated with HSCH₂CH₂O₂CC₇H₁₅ gave Me₂Sn(SCH₂CH₂O₂CC₇H₁₅)₂. The methyltin thioethers were stabilizers for polyvinyl chloride.

IT 26636-01-1P 53040-42-9P 57807-85-9P
57807-86-0P 57813-59-9P 57813-60-2P
57813-61-3P 57813-62-4P

(prepn. of)

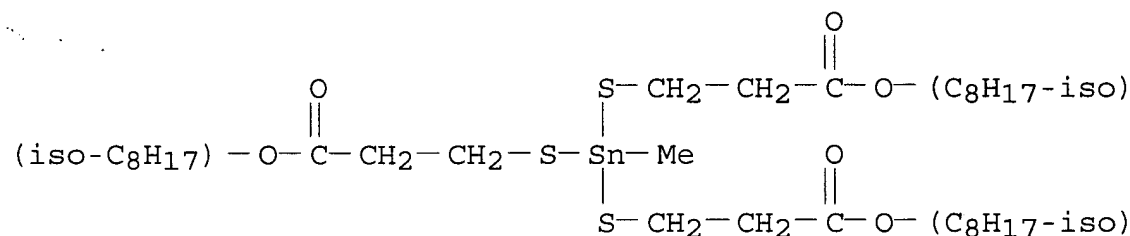
RN 26636-01-1 ZCAPLUS

CN Acetic acid, 2,2'-[(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



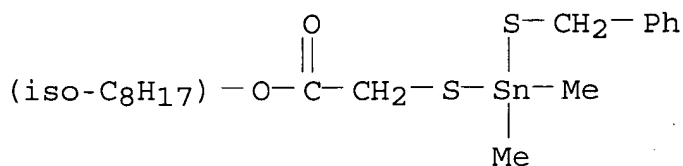
RN 53040-42-9 ZCAPLUS

CN Propanoic acid, 3,3',3''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



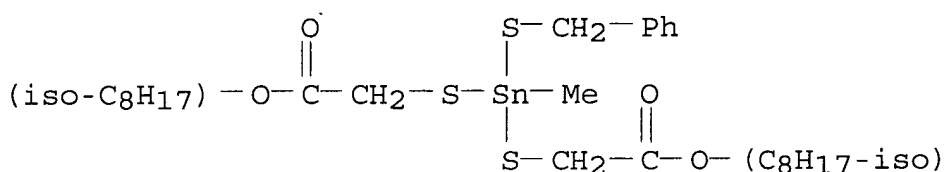
RN 57807-85-9 ZCAPLUS

CN Acetic acid, [[dimethyl[(phenylmethyl)thio]stannyl]thio]-, isooctyl ester (9CI) (CA INDEX NAME)



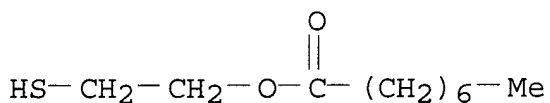
RN 57807-86-0 ZCAPLUS

CN Acetic acid, 2,2'-[[methyl[(phenylmethyl)thio]stannylene]bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



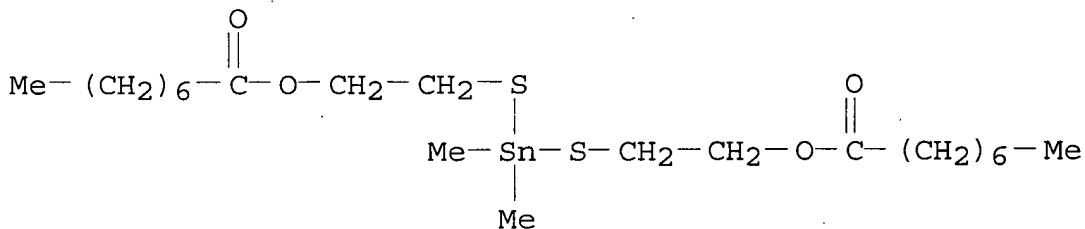
RN 57813-59-9 ZCAPLUS

CN Octanoic acid, 2-mercaptoethyl ester (9CI) (CA INDEX NAME)



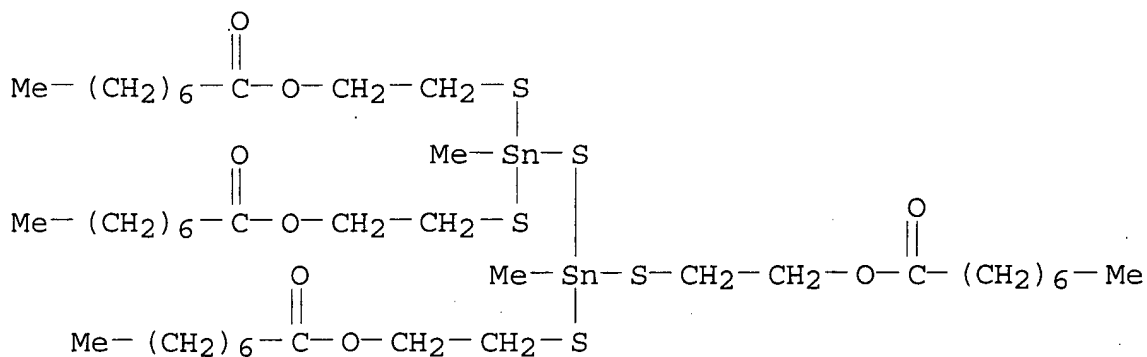
RN 57813-60-2 ZCAPLUS

CN Octanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

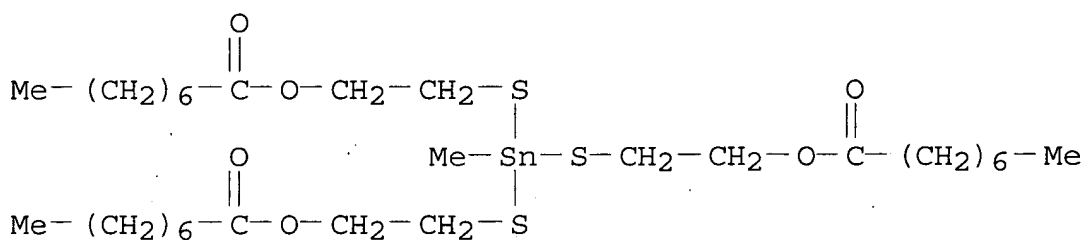


RN 57813-61-3 ZCAPLUS

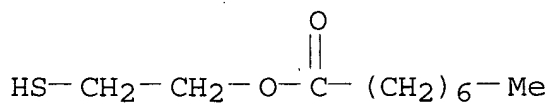
CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



CN Octanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)



CN	Octanoic acid, 2-mercaptoethyl ester (9CI)	(CA INDEX NAME)
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.(reaction with tin chlorides)